



**Actuarial Standard
of Practice
No. 1**

Introductory Actuarial Standard of Practice

**Developed by the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2013**

Doc. No. 170

Note: *Nonguaranteed Charges or Benefits for Life Insurance Policies or Annuity Contracts*, which was formerly known as ASOP No. 1, has been renumbered as ASOP No. 2 effective on March 21, 2013. *Recommendations for Actuarial Communications Related to Statements of Financial Accounting Standards Nos. 87 and 88*, which was formerly labeled ASOP No. 2, was repealed on March 14, 2011 and does not apply to actuarial communications issued after that date.

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TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Introductory Actuarial Standard of Practice

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 1

This document contains the final version of a revision of the Introduction to ASOPs, now titled ASOP No. 1, *Introductory Actuarial Standard of Practice*.

Background

This Introductory ASOP is a revision of the *Introduction to the Actuarial Standards of Practice*. The Introduction was adopted in 2004 to replace a Preface to the standards that was adopted in 1989. The Introduction was intended to offer actuaries guidance on the ASB's operations, the content and format of standards, and the ASB's intent with respect to certain terms that appear frequently in the text of the standards themselves.

The Introduction was updated in October 2008 to make clear that the ASB, in promulgating ASOPs, seeks to define an appropriate level of practice (rather than simply codifying current practices), to remove references to “prescribed statements of actuarial opinion” in light of revisions made to the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* and to conform the provisions on deviations from the ASOPs to the deviation provisions of ASOP No. 41, *Actuarial Communications*, in accordance with the ASB’s project to standardize the “deviation” provisions in all ASOPs. The ASB received a number of comments on the Introduction at the time of this 2008 revision and concluded that further review would be appropriate. The revision is a result of that review.

In addition, to reinforce that the Introductory ASOP contains guidance, it has been numbered as ASOP No. 1. The previous ASOP No. 1, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, has been renumbered as ASOP No. 2. The previous ASOP No. 2, *Recommendations for Actuarial Communications Related to Statements of Financial Accounting Standards Nos. 87 and 88*, was repealed in March 2011. The sole reference to ASOP No. 1, which appears in ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*, has been updated to reflect this change.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in December 2011 with a comment deadline of May 31, 2012. Thirteen comment letters were received and considered in making clarifications that were reflected in this final ASOP. For a summary of the issues contained in

these comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard but did not result in substantive changes to the standard.

Key Changes

Many comments were received with respect to the terms “must,” “should,” and “should consider.” Some commentators objected to the concept that failure to comply with a “should” statement constitutes a deviation from the guidance in the ASOP and hence triggers disclosures. These commentators indicated that failure to follow a “should” statement had not previously been understood to be a deviation requiring disclosure, so that ASOPs were in effect being retroactively changed. Other commentators indicated the distinction between the two terms “must” and “should” was not clear.

To assist in reviewing these and other comments, the General Committee analyzed the use of the terms “should,” “should consider,” and “must” in the various ASOPs. The General Committee concluded that the use of these terms in this ASOP No. 1 would not retroactively change the intended meaning of the terms as used in the various ASOPs, and so the Introductory ASOP reaffirms that a failure to follow a “should” statement constitutes a deviation from the guidance.

In order to better contrast and clarify the meaning of “must” vs. “should,” the definitions have been combined into a single “must/should” discussion that defines each term and highlights the distinction between the terms.

The General Committee concluded that a definition of “should consider” is not needed. The terms “must” and “should” are generally followed by an action (for example, “disclose” or “document”). When the term “should consider” is used, the action required to be performed (or to be disclosed as a deviation if not performed) is to consider something. Thus, there is no need to separately define “should consider.” The revised ASOP makes clear that if the actuary considers something the ASOP indicates he or she should consider, but determines that the item being considered is inappropriate or impractical, the actuary has complied with the guidance and there is no deviation to be disclosed.

The final version of this Introductory ASOP contains several other clarifications but none are considered substantial. Notable changes are the addition of a definition of “deviation” and clarifying changes to the definitions of a number of other items, largely as a result of comments received.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in March 2013 to adopt this standard.

ASOP No. 1—March 2013

General Committee of the ASB

Michael S. Abroe, Chairperson
Maria M. Sarli, Vice-Chairperson

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

INTRODUCTORY ACTUARIAL STANDARD OF PRACTICE

Section 1. Overview

The Actuarial Standards Board (ASB) promulgates actuarial standards of practice (ASOPs) for use by actuaries when rendering actuarial services in the United States. The ASB is vested by the U.S.-based actuarial organizations¹ with the responsibility for promulgating ASOPs for actuaries rendering actuarial services in the United States. Each of these organizations requires its members, through its *Code of Professional Conduct*² (Code), to satisfy applicable ASOPs when rendering actuarial services in the United States.

This Introductory ASOP sets forth principles that have been broadly applicable to the work of the ASB since its inception, and carries the same weight and authority as other ASOPs. Any Actuarial Compliance Guidelines promulgated or republished by the ASB that have not been repealed or superseded carry the same weight as ASOPs.

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S. The ASB promulgates ASOPs through a notice and comment process described in the *ASB Procedures Manual*. The ASB has exclusive authority in the United States to determine whether an ASOP is needed in a particular actuarial practice area, to promulgate ASOPs, and to amend or repeal ASOPs. The ASB is the final authority for determining the content of ASOPs.

ASOPs are binding on members of the U.S.-based actuarial organizations when rendering actuarial services in the U.S. While these ASOPs are binding, they are not the only considerations that affect an actuary's work. Other considerations may include legal and regulatory requirements, professional requirements promulgated by employers or actuarial organizations, evolving actuarial practice, and the actuary's own professional judgment informed by the nature of the engagement. The ASOPs provide a basic framework that is intended to accommodate these additional considerations.

This introductory standard is effective for all actuarial services performed on or after June 1, 2013.

¹ The American Academy of Actuaries (Academy), the American Society of Pension Professionals and Actuaries, the Casualty Actuarial Society, the Conference of Consulting Actuaries, and the Society of Actuaries.

² These organizations adopted the *Code of Professional Conduct* effective January 1, 2001.

Section 2. Definitions, Discussions, and Related Guidance

Each ASOP includes a list of definitions of certain terms used within it. With the exception of this Introductory ASOP, those terms are defined only for use in that particular ASOP, and the definitions can and do differ among ASOPs, reflecting different uses of language in various segments of the profession. Definitions and discussions included in this Introductory ASOP are intended to apply to all other ASOPs if the term is used in such ASOPs, unless the ASOP includes a specific definition of the term.

ASOPs frequently use terms that, while not defined within them, are integral to an informed reading of the ASOPs. Where terms are not defined or discussed within the ASOPs, the actuary is expected to interpret a term in a straight-forward manner, consistent with the common usage of the term. If an actuary has any questions about the meaning of a specific term, the actuary should consult the Actuarial Board for Counseling and Discipline (ABCD) for guidance.

Following are some common terms used in the ASOPs:

2.1 Terms of Construction

- a. *Must/Should*—The words “must” and “should” are used to provide guidance in the ASOPs. “Must” as used in the ASOPs means that the ASB does not anticipate that the actuary will have any reasonable alternative but to follow a particular course of action. In contrast, the word “should” indicates what is normally the appropriate practice for an actuary to follow when rendering actuarial services. Situations may arise where the actuary applies professional judgment and concludes that complying with this practice would be inappropriate, given the nature and purpose of the assignment and the principal’s needs, or that under the circumstances it would not be reasonable or practical to follow the practice.

Failure to follow a course of action denoted by either the term “must” or “should” constitutes a deviation from the guidance of the ASOP. In either event, the actuary is directed to ASOP No. 41, *Actuarial Communications*.

The terms “must” and “should” are generally followed by a verb or phrase denoting action(s), such as “disclose,” “document,” “consider,” or “take into account.” For example, the phrase “should consider” is often used to suggest potential courses of action. If, after consideration, in the actuary’s professional judgment an action is not appropriate, the action is not required and failure to take this action is not a deviation from the guidance in the standard.

- b. *May*—“May” as used in the ASOPs means that the course of action described is one that would be considered reasonable and appropriate in many circumstances. “May” in ASOPs is often used when providing examples (for example, factors the actuary may consider; methods that may be appropriate). It is not intended to indicate that a course of action is reasonable and appropriate in all circumstances, nor to imply that alternative courses of action are impermissible.

- 2.2 *Actuarial Services*—Professional services provided to a principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings or opinions based on actuarial considerations.
- 2.3 *Actuarial Soundness*—The phrase “actuarial soundness” has different meanings in different contexts and might be dictated or imposed by an outside entity. In rendering actuarial services, if the actuary identifies the process or result as “actuarially sound,” the actuary should define the meaning of “actuarially sound” in that context.
- 2.4 *Deviation*—The act of departing from the guidance of an ASOP.
- 2.5 *Known*—ASOPs frequently refer to circumstances, factors, practices of the principal, or other items that are known to the actuary. In many cases, the actuary must rely upon the principal and others acting on the principal’s behalf to supply relevant information. Unless an ASOP clearly indicates otherwise, “known” means that the actuary had actual knowledge of the item in question at the time the actuary rendered actuarial services.
- 2.6 *Materiality*—“Materiality” is a consideration in many aspects of the actuary’s work. An item or a combination of related items is material if its omission or misstatement could influence a decision of an intended user. When evaluating materiality, the actuary should consider the purposes of the actuary’s work and how the actuary anticipates it will be used by intended users. The actuary should evaluate materiality of the various aspects of the task using professional judgment and any applicable law (statutes, regulations, and other legally binding authority), standard, or guideline. In some circumstances, materiality will be determined by an external user, such as an auditor, based on information not known to the actuary. The guidance in ASOPs need not be applied to immaterial items.
- 2.7 *Practical or Practicable*—ASOPs frequently call upon actuaries to undertake certain inquiries, perform certain analytical tests, or make disclosures if it is “practical” or “practicable” to do so. These terms are intended to suggest that all possible steps need not always be taken to complete an assignment. A professional assignment frequently requires the actuary to adopt a course of action that is likely to yield an appropriate result without being unnecessarily time-consuming, elaborate, or costly relative to the principal’s needs. Thus, it is appropriate for the actuary, exercising professional judgment, to decide that the circumstances surrounding a particular assignment are such that it would not be necessary to undertake a particular task. (Note: ASOPs commonly use “practical” and “practicable” interchangeably.)
- 2.8 *Principal*—A client or employer of the actuary.
- 2.9 *Professional Judgment*—Actuaries bring to their assignments not only highly specialized training, but also the broader knowledge and understanding that come from experience. For example, the ASOPs frequently call upon actuaries to apply both training and

experience to their professional assignments, recognizing that reasonable differences may arise when actuaries project the effect of uncertain events.

- 2.10 *Reasonable*—In many instances, the ASOPs call for the actuary to take “reasonable” steps, make “reasonable” inquiries, select “reasonable” assumptions or methods, or otherwise exercise professional judgment to produce a “reasonable” result when rendering actuarial services. The intent is to call upon the actuary to exercise the level of care and diligence that, in the actuary’s professional judgment, is necessary to complete the assignment in an appropriate manner.

Because actuarial practice commonly involves the estimation of uncertain events, there will often be a range of reasonable methods and assumptions, and two actuaries could follow a particular ASOP, both using reasonable methods and assumptions, and reach different but reasonable results.

- 2.11 *Reliance*—Actuaries frequently rely upon others for information and professional judgments that are pertinent to an assignment. Similarly, actuaries often rely upon others to perform some component of an actuarial analysis. Accordingly, some ASOPs permit the actuary to rely in good faith upon such individuals, subject to appropriate disclosure of such reliance, if required by applicable ASOPs (for example, ASOP Nos. 23, *Data Quality*, and 41).
- 2.12 *Significance/Significant*—Significance can have different meanings. A result may be deemed to be statistically significant if it is determined that the probability that the result was produced by random chance is small. An event may be described as significant if the likelihood of its occurrence is more than remote. In addition, a result may be significant because it is of consequence. Other uses may be encountered in actuarial practice. The actuary should exercise care in interpreting or using these words.

Section 3. Purpose and Format of Actuarial Standards of Practice

- 3.1 The Purpose of ASOPs—ASOPs identify what should be considered, done, documented, and disclosed when rendering actuarial services.
- 3.1.1 The ASB promulgates standards for appropriate actuarial practice. In the course of developing or revising an ASOP, the ASB seeks the input of the actuarial profession and other interested parties. This process of exposure is intended to seek input on the effect that the proposed ASOP would have on the level of practice.
- 3.1.2 The ASOPs are not intended to shift the burden of proof or the burden of production during litigation, and deviation from one or more provisions of an ASOP should not, in and of itself, be presumed to be malpractice. ASOPs are intended for use by actuaries who are qualified to make use of them by virtue of having the necessary education and experience to understand and apply them (see Precept 2, Qualification Standards, of the Code). Other individuals should

consider obtaining the advice of a qualified actuary before making use of, or otherwise relying upon, ASOPs.

- 3.1.3 The ASOPs are intended to provide guidance for dealing with commonly encountered situations. Actuaries in professional practice may also have to handle new or non-routine situations not anticipated by the ASOPs. In all situations, the actuary should exercise professional judgment in rendering actuarial services.
- 3.1.4 The ASOPs are principles-based and do not attempt to dictate every step and decision in an actuarial assignment. Generally, ASOPs are not narrowly prescriptive and neither dictate a single approach nor mandate a particular outcome. Rather, ASOPs provide the actuary with an analytical framework for exercising professional judgment, and identify factors that the actuary typically should consider when rendering a particular type of actuarial service. The ASOPs allow for the actuary to use professional judgment when selecting methods and assumptions, conducting an analysis, and reaching a conclusion, and recognize that actuaries can reasonably reach different conclusions when faced with the same facts.
- 3.1.5 There are situations where applicable law (statutes, regulations, and other legally binding authority) may require the actuary to deviate from the guidance of an ASOP. Where requirements of law conflict with the guidance of an ASOP, the requirements of law shall govern. The ASOPs provide guidance on this and other situations where the actuary deviates from the guidance of an ASOP (see section 4.5).
- 3.1.6 Unlike the ASOPs, which are binding upon actuaries, other actuarial literature provides information that an actuary may choose, but is not required, to consider when rendering actuarial services. For example, practice notes published by the Academy describe various methods actuaries may use, but do not establish standards of practice and are not binding upon actuaries. Similarly, research papers, learned treatises, study notes, actuarial textbooks, journal articles, and presentations at actuarial meetings can be informative, keeping the actuary abreast of developments as actuarial science evolves, but do not establish binding requirements upon the actuary.
- 3.1.7 Each ASOP has a specified effective date. Prior to that date, exposure drafts of the ASOP, and the ASOP itself from the date of its publication to its effective date, form part of the literature of the actuarial profession; actuaries may look to them at their discretion for advisory guidance. An ASOP is not binding until the effective date of the ASOP. Unless specified otherwise, in the case of a revision to an existing ASOP, the existing ASOP is binding until the effective date of the revised ASOP.

- 3.2 The Format of ASOPs—Each ASOP document includes (1) a transmittal memorandum, (2) the ASOP itself, and (3) one or more supporting appendices.³ The transmittal memorandum and the appendices are not part of the ASOP and are nonbinding, but may be useful to the actuary in interpreting the standard.

Section 4. Compliance with ASOPs

- 4.1 ASOPs are binding upon actuaries. Failure to comply with an applicable ASOP results in a breach of the Code. Such breaches subject the actuary to the profession’s counseling and discipline processes.
- 4.2 Actuaries should take a good faith approach in complying with ASOPs, exercising good judgment and professional integrity. It is not appropriate for users of ASOPs to make a strained interpretation of the provisions of an ASOP.
- 4.3 Actuaries should comply with those ASOPs that are applicable to the task at hand. However, not all ASOPs will apply. An ASOP should not be interpreted as having applicability beyond its stated scope and purpose. Actuaries are responsible for determining which ASOPs apply to the task at hand. If no ASOPs specific to the task are applicable, the actuary may, but is not required to, consider the guidance in related ASOPs. Most, but not all, ASOPs are task-specific, dealing with particular kinds of actuarial services. A few ASOPs, however, deal more broadly with particular aspects of many types of actuarial services (such as ASOP Nos. 23 and 41, and this Introductory ASOP).
- 4.4 When an actuary believes that multiple ASOPs have conflicting provisions when applied to a specific situation and none provide explicit guidance concerning which governs, the actuary should apply professional judgment and may wish to contact the ABCD for confidential guidance on appropriate practice.
- 4.5 The ASOPs make specific provision for those situations where the actuary is required to or deems it appropriate to deviate from one or more provisions of an ASOP. It is not a breach of an ASOP to deviate from one or more of its provisions if the actuary does so in the manner described in the ASOP, including making the disclosures related to the deviation as required in such ASOP and in ASOP No. 41.

³ With respect to how the ASOP document is organized, the current ASOP format differs from that of some earlier ASOPs, but all ASOP documents contain similar content, as described in the appendix 1 to this *Introductory ASOP*.

Appendix 1

Background and Additional Information

Note: This appendix is provided for informational purposes, but is not part of the standard of practice and is nonbinding.

Clarification of Language

As the ASB revises ASOPs, it strives to improve clarity and consistency in language. For example, the 2010 update to ASOP No. 41, *Actuarial Communications*, included changes in definitions to be more consistent with those found in the *Code of Professional Conduct* (Code) and in the recently revised Qualification Standards, and also incorporated language to help create consistency in the treatment of deviation language within all ASOPs. Similarly, in this Introductory ASOP, a number of definitions and discussions of terms used in many of the ASOPs have been added and, where the terms added also appear in the Code, they have been made consistent. In addition, an effort has been made to replace undefined terms or phrases with phrases that include terms that are defined, discussed, or used in the Code.

Role and Scope of ASOPs

The Introductory ASOP has been revised to clarify the role and scope of ASOPs. While ASOPs are binding on actuaries rendering actuarial services in the U.S., the Introductory ASOP now more directly acknowledges that actuaries are subject to a range of requirements and considerations that may affect how they do their work. These include legal and regulatory requirements, their employer's peer review or other quality assurance processes and policies, continuing education requirements, the Code, and the actuary's own professional and ethical standards. Because the ASOPs are not overly prescriptive and allow for disclosed deviations, the ASOP framework is designed to accommodate the actuary's judgment in providing high-quality actuarial services and acting with integrity. The Academy's Council on Professionalism publishes advisory Applicability Guidelines to assist actuaries in identifying the ASOPs that may be relevant.

Development of ASOPs

Proposals for developing new ASOPs and revising existing ones come from a variety of sources, such as individual actuaries, actuarial firms, professional committees, the ABCD, the ASB committees, and the ASB itself. If it accepts a proposal, the ASB assigns it to the appropriate committee or task force to begin the project.

The process of developing a new ASOP or revising an existing ASOP usually begins with the identification of practices that the ASB believes are appropriate to the proper performance of a

particular type of actuarial service. After reviewing the current range of practices, the ASB determines whether it is appropriate under the circumstances to develop a new or revise an existing ASOP to reflect emerging issues in actuarial practice, recent advancements in actuarial science, or for other reasons.

Organization of ASOPs

The ASB strives to organize all ASOPs in a similar fashion to the extent feasible. The ASOP document includes a transmittal memorandum, the ASOP itself, and appendices. The transmittal memorandum provides brief background information and a description of the key issues related to the development or revision of the ASOP. The appendices (1) provide additional background and historical issues, (2) describe current or alternative practices, and (3) summarize the major issues raised in the exposure process and their disposition by the drafting committee. Additional appendices may also contain supporting documents, bibliographies, or illustrative examples.

Each ASOP contains four sections. Except for this Introductory ASOP, the sections are organized as follows:

- The first section summarizes the scope, cross references, and effective date of the ASOP.
- The second section defines or discusses certain terms used within the ASOP.
- The third section provides an analysis of issues and recommended practices.
- The fourth section addresses communications and disclosures.

The scope identifies the intended application of the ASOP to the work of the actuary. In some instances, the actuary serves as an advisor to a principal and does not actually make decisions or take actions on the principal's behalf. In those instances, the ASOP may indicate in its scope to what extent the ASOP addresses the actuary's role in advising the principal. However, the ASOPs are not intended to make the actuary responsible if the principal acts contrary to the actuary's advice.

The Analysis of Issues and Recommended Practices section is organized into major topics or issues, or major tasks involved in rendering actuarial services within the ASOP's scope. Emphasis is placed on providing the actuary with an appropriate analytical framework for completing an assignment that is within the scope of the ASOP.

Communications or disclosures pertinent to the subject of the ASOP and applicable limitations are identified in the Communications and Disclosures section and in ASOP No. 41. Where appropriate, reference may be made to applicable provisions of the Code. This section also includes a description of what an actuary should do when, in the actuary's professional judgment, a deviation from the guidance in the ASOP is deemed to be appropriate.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the Introductory ASOP was issued in December 2011 with a comment deadline of May 31, 2012. Thirteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The General Committee of the Actuarial Standards Board carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the General Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the General Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	A number of commentators indicated that the Introductory ASOP needs a number (for example, ASOP No. 0 or ASOP No. 1) so that actuaries understand that it is an ASOP that contains guidance.
Response	The reviewers agree and numbered the Introductory ASOP as ASOP No. 1. The previous ASOP No. 1, <i>Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts</i> , has been renumbered as No. 2, since ASOP No. 2, <i>Recommendations for Actuarial Communications Related to Statements of Financial Accounting Standards Nos. 87 and 88</i> , was repealed in March 2011.
Comment	One commentator suggested moving the general deviation language from ASOP No. 41, <i>Actuarial Communications</i> , to the Introductory ASOP, and having ASOP No. 41 deal only with deviations related to communication of results.
Response	The reviewers believe ASOP No. 41 is an appropriate vehicle for guidance on communicating deviation from any ASOP, because ASOP No. 41 applies to actuaries issuing actuarial communications within any practice area. As a result, no change was made.

SECTION 1: OVERVIEW	
Comment	Some commentators believed that the sentence “Each of these organizations requires its members, through its <i>Code of Professional Conduct</i> ⁴ (Code), to observe ASOPs when rendering actuarial services in the United States,” contradicts the Code because it is incomplete (i.e. the sentence doesn’t mention that actuaries must also under the Code satisfy standards of practice in a non-U.S. jurisdiction where they render services).
Response	The reviewers disagree and made no change. The reviewers believe the statement is accurate as written, and is not inaccurate merely because it does not also describe Code requirements that relate to actuarial standards of practice that exist in other jurisdictions in which the actuary may render actuarial services.
Comment	One commentator suggested revising the sentence “Each of these organizations requires its members, through its Code ⁵ , to observe ASOPs when rendering actuarial services in the United States,” to match the wording in the Code by replacing “observe” with “satisfy applicable.”
Response	The reviewers made the suggested change but note that the Code uses both terms in the discussion of this topic.
Comment	One commentator indicated that the sentence “The ASOPs provide a basic framework that will typically accommodate these additional considerations.” should be revised to read “The ASOPs provide a basic framework that should accommodate these additional considerations.”
Response	The reviewers agree and made the following change: “The ASOPs provide a basic framework that is intended to accommodate these additional considerations.”
SECTION 2: DEFINITIONS, DISCUSSIONS, AND RELATED GUIDANCE	
Comment	One commentator suggested that the definition of Deviation (“The act of departing from the guidance of an ASOP.”) in ASOP No. 41 also be included here.
Response	The reviewers agree and added the definition.
Section 2.1, Terms of Construction	
Comment	One commentator asked whether the Committee meant “under ordinary circumstances” rather than “under the circumstances” in “Must”—“Must” as used in the ASOPs means that, under the circumstances, the actuary has no reasonable alternative but to follow a particular course of action.”
Response	The reviewers disagree that “under ordinary circumstances” was intended, but note that changes made to the section should eliminate potential confusion.

⁴ These organizations adopted the *Code of Professional Conduct* effective January 1, 2001.

⁵ These organizations adopted the *Code of Professional Conduct* effective January 1, 2001.

ASOP No. 1—March 2013

Comment	<p>Many comments were received with respect to the terms “must,” “should,” and “should consider,” as follows:</p> <ul style="list-style-type: none">• Commentators indicated that, because failure to follow a “must” or a “should” statement both constitute a deviation requiring disclosure, the distinction between the two terms was not clear.• Commentators objected to the concept that failure to comply with a “should” statement constitutes a deviation that must be disclosed under ASOP No. 41. These commentators indicated that failure to follow a “should” statement had not previously been understood to be a deviation requiring disclosure, so that ASOPs were in effect being retroactively changed, and actuaries should be afforded an opportunity to comment on the use of the word should in the various ASOPs in that light.• A commentator questioned whether a definition of “should consider” was needed.• A commentator requested that the ASOP specifically indicate that it does not create a duty to document actions considered but not taken and the reasons therefor.
Response	<p>To assist in reviewing the comments, the reviewers analyzed the use of the terms “should,” “should consider,” and “must” in the various ASOPs, and reached the following conclusions:</p> <ul style="list-style-type: none">• In order to better contrast the meaning of “must” versus “should,” the definitions have been combined into a single “Must/Should” discussion that defines each term and highlights the distinction between the terms.• The Introductory ASOP reaffirms that a failure to follow a “should” statement constitutes a deviation.• The reviewers agree that a definition of “should consider” is not needed. The terms “must” and “should” are generally followed by an action (for example, “disclose” or “document”). When the term “should consider” is used, the action to be performed (or to be disclosed as a deviation if not performed) is to consider something. Thus, there is no need to separately define “should consider.” The revised ASOP makes clear that if the actuary considers something the ASOP indicates he or she should consider, but determines that the item being considered is inappropriate or impractical, the actuary has complied with the guidance and there is no deviation to be disclosed.• Because the ASOP does not indicate that actions considered but not taken (and the reasons therefor) must be disclosed, the reviewers do not believe it is necessary for the ASOP to indicate that they need not be disclosed. Thus, no changes have been made in response to this comment.

Comment	A commentator requested that a statement “Failure to follow the course of action which follows ‘may’ does not constitute a deviation” be added.
Response	Because the ASOP does not suggest that failure to follow the course of action that follows “may” constitutes a deviation, the reviewers do not believe it is necessary for the ASOP to indicate that it would not be a deviation. Therefore, no change was made in response to this comment.

Section 2.2, Actuarial Services

Comment	A commentator indicated that “actuarial services” is defined in ASOP No. 41 and questioned whether the definition should be in two ASOPs. In addition, a commentator suggested a small change in the definition in the Introductory ASOP to match the definition in the Code (i.e., change “on” to “upon” in “Such services include the rendering of advice, recommendations, findings or opinions based on actuarial considerations.”). Other commentators suggested adding “but are not limited to” after “Such services include” in the sentence above.
Response	Because the term actuarial services is applicable to all ASOPs and used in nearly all of them, the reviewers decided that including the definition in the Introductory ASOP is appropriate. The reviewers also made the indicated change (i.e. “on” to “upon”) to match the definition in the Code (which also appears in ASOP No. 41). The reviewers decided not to add “but are not limited to” to the definition. The revised definition matches the definition in the Code. In addition, the reviewers believe the list of services in the definition to be illustrative rather than comprehensive.

Section 2.3, Actuarial Soundness

Comment	A commentator suggested that a statement be added indicating that “actuarial soundness” is not an actuarial concept, but is a concept imposed by outside entities. In addition, another commentator requested that the ASOP indicate that the term “actuarial soundness” only needs to be defined once in an actuarial communication. A third commentator indicated that in property and casualty ratemaking the term “actuarial soundness” is well defined by the Casualty Actuarial Society’s ratemaking principles, and should not need to be defined in an actuarial communication.
Response	The reviewers agree that the concept of actuarial soundness might be imposed by an outside entity and added a statement to that effect. However, the reviewers do not believe it is necessary to explicitly state that actuarial soundness need not be defined multiple times in a single actuarial communication, and no change has been made in this regard. With respect to the third comment, no change was made. The reviewers note that ASOP No. 41 already provides that an actuarial communication can direct the reader to information provided in other documents and thus an actuary can direct the reader to the “actuarial soundness” definition intended.

Section 2.4, Known	
Comment	One commentator indicated that the third sentence in this discussion, which reads “The actuary cannot reasonably be expected to act based on information that was not provided” could be interpreted to excuse an actuary from making reasonable inquiries to try to obtain information.
Response	The reviewers do not believe the sentence added anything to the discussion and deleted the sentence. This should avoid the potential misinterpretation.
Section 2.5, Materiality	
Comment	<p>There were a number of comments on this section:</p> <ul style="list-style-type: none">• A commentator suggested that the ASOP not define material since “materiality” standards are normally imposed by others, and where they aren’t there isn’t a difference between significance and materiality. The commentator suggested using the materiality definition to define significant instead.• A commentator indicated that the statement “The provisions of ASOPs need not be applied to immaterial items” was somewhat circular, because an actuary would need to apply the ASOP to determine that an item is immaterial and that the ASOP allows it to be disregarded.• A commentator indicated that information should be required to be disclosed to allow others to make an assessment of the reasonability of the decision to exclude items as immaterial.
Response	The reviewers note that the words “material” and “materiality” are used in a number of ASOPs and, therefore, retaining the discussion is appropriate. The reviewers disagree with the other two comments.
Section 2.6, Practical or Practicable	
Comment	One commentator wanted to add the statement “No ASOP requires the actuary to perform a task that in the actuary’s professional judgment is impractical based on the needs of and contractual relationship with the principal.” Another commentator wanted the terms “practical” and “reasonable” and the difference between them clarified further.
Response	The reviewers consider the proposed statement overly broad and note that deviation from the guidance in an ASOP is permitted when appropriate, with disclosure in accordance with ASOP No. 41. Therefore, no changes were made in response to the first comment. In general, the reviewers believe that the term “practical” applies to a process while “reasonable” applies to a result, and changes were made in the discussion of “reasonable” to make that clear.

Section 2.8, Professional Judgment	
Comment	A commentator suggested that the phrase “recognizing that reasonable differences may arise when actuaries project the effect of uncertain events” in this discussion also belonged in the discussion of reasonable.
Response	The reviewers agree and added the sentence “Because actuarial practice commonly involves the estimation of uncertain events, there will often be a range of reasonable methods and assumptions, and two actuaries could follow a particular ASOP, both using reasonable methods and assumptions, and reach different but reasonable results” to the discussion of reasonable.
Section 2.9, Reasonable	
Comment	A commentator felt that the discussion should focus on “the act of reasoning or reaching conclusions based on supported evidence, logical argument and actuarial judgment,” which the commentator believes would better parallel the usage in other ASOPs. Another commentator suggested avoiding the use of the stem “reason” or “reasonable” in the discussion.
Response	The reviewers do not agree. As mentioned above, the reviewers believe that the discussion of reasonable should focus on producing a reasonable result, and the discussion was modified to accomplish this by adding to the discussion “to produce a ‘reasonable’ result when rendering actuarial services.”
Section 2.11, Significance/Significant	
Comment	There were several comments on this discussion, primarily indicating that there was not a clear distinction between the terms material and significant.
Response	The reviewers note that there are several different common uses of the word significant, and different usages are used in different ASOPs. Section 2.11 was intended as a discussion of the various ways in which the term is used, rather than a definition. The discussion was expanded to include an additional common usage (“An event may be described as significant if the likelihood of its occurrence is more than remote.”). With the changes to the wording for both “materiality” and “significance/significant,” the reviewers believe there is a clearer distinction between the two terms.

<u>SECTION 3. PURPOSE AND FORMAT OF ACTUARIAL STANDARDS OF PRACTICE</u>	
Comment	A commentator indicated that the placement of this section within the body of the Introductory ASOP is inconsistent with the Introductory ASOP itself being an ASOP, because there is nothing in this section that an actuary must understand or do. The commentator suggested moving this section to the appendix or another document.
Response	The reviewers note that the Introductory ASOP is unique and can have a different structure from the other ASOPs. The reviewers decided to leave this within the body of the Introductory ASOP to ensure it received appropriate visibility.
Section 3.1.2	
Comment	A commentator believed the term “production in litigation” should have been “results in litigation” in the sentence “ASOPs are not intended to shift the burden of proof or production in litigation, and failure to satisfy one or more provisions of an ASOP should not, in and of itself, be presumed to be malpractice.”
Response	The reviewers changed the wording to clarify that a deviation from a standard should not result in the presumption of malpractice.
Comment	A commentator believed that the sentence “Other individuals should consider obtaining the advice of a qualified actuary before making use of, or otherwise relying upon, ASOPs” should be replaced with “ASOPs should not be used or relied upon by those who are not actuaries.”
Response	The reviewers disagree and made no change.
Section 3.1.4	
Comment	A commentator wanted to add “generally” before “not narrowly prescriptive,” and “typically” before “neither dictate” in the following sentence “The ASOPs are not narrowly prescriptive and neither dictate a single approach nor mandate a particular outcome.” Another commentator noted that some sections of ASOPs are prescriptive.
Response	The reviewers agree that adding “generally” to the sentence is appropriate and made the change but do not believe the addition of “typically” would enhance the understanding.

Comment	A commentator suggested that the sentence “For example, because actuarial practice commonly involves the measurement of uncertain events, there will often be a range of reasonable assumptions, and two actuaries could follow a particular ASOP, both using reasonable methods and assumptions, and reach different but reasonable results” be moved into the discussion of reasonable.
Response	The reviewers agree and moved the sentence (with minor wording changes).
Section 3.1.5	
Comment	A commentator thought that this point (that an actuary may deviate from an ASOP to comply with applicable statutes, regulations or other binding authority) was better explained in other ASOPs and that the language should be modified.
Response	The reviewers believe the language is clear and consistent with the Code, and therefore made no change.
Section 3.1.6	
Comment	A commentator suggested that the word “might” be changed to “may” in the sentence “Unlike the ASOPs, which are binding upon actuaries, other actuarial literature provides information that an actuary might choose, but is not required, to consider when rendering actuarial services.”
Response	The reviewers agree and made the change.
Section 3.1.7	
Comment	A commentator suggested this section be revised to indicate that early adoption of the revised Introductory ASOP is permitted.
Response	The reviewers believe that there is nothing in this revised Introductory ASOP that would result in noncompliance with the current Introduction to the ASOPs. Therefore, no change was made.
SECTION 4: COMPLIANCE WITH ASOPS	
Section 4.1	
Comment	A commentator found this confusing, saying that you can deviate from an ASOP if you disclose the deviation, so failure to comply with an ASOP is not a breach of the Code. Another commentator suggested adding information to further clarify that deviations, with appropriate disclosures, are permitted.
Response	The reviewers note that the deviation from the guidance in an ASOP and disclosing the deviation is not a failure to comply with the ASOP, as discussed in section 4.5. Accordingly, no substantive changes were made in response to these comments, although the second sentence in this section was simplified.
Comment	Some commentators believe this section belongs in the appendix, not the body of the ASOP, because it doesn’t tell the actuary to do anything.
Response	Failure to comply with the ASOPs results in a breach of the Code. The reviewers believe this is an important point that belongs in the body of the Introductory ASOP. Therefore, no change was made.

ASOP No. 1—March 2013

Comment	A commentator suggested adding “may” before “subject the actuary” in the sentence “Such breaches subject the actuary to the profession’s counseling and discipline processes.”
Response	The reviewers note that a breach subjects the actuary to ABCD processes, even though it may not result in ABCD action. Therefore, no changes were made.
Section 4.2	
Comment	A commentator believes that the sentence “It is not appropriate for users of ASOPs to make a strained interpretation of the provisions of an ASOP “ is not needed because the point is covered by the first sentence, and also indicated that an undefined term like “strained” should not be used.
Response	The reviewers believe the second sentence differs from the first and decided against deleting it.
Section 4.3	
Comment	A commentator suggested that the word “relevant” be replaced with “applicable” in the sentence “Actuaries should comply with those ASOPs that are relevant to the task at hand; not all ASOPs will apply.” because the Code doesn’t use the word “relevant,” it uses “applicable.”
Response	The reviewers agree with replacing “relevant” with “applicable” and made that change.
Comment	A commentator suggested that the following sentence be deleted: “An ASOP should not be interpreted as having applicability beyond its stated scope and purpose” because the commentator believes it discourages an actuary from looking at ASOPs applicable to similar issues when there is no ASOP directly applicable, which the commentator believes to be a good practice that should not be discouraged.
Response	The reviewers believe that clearly defined applicability is important and does not discourage other uses. Therefore, the sentence was not deleted.
Comment	A commentator questioned whether the actuary has unfettered discretion to come to a conclusion about which ASOPs apply, even though the ASOPs may seem to suggest otherwise, and whether the actuary’s determination was open to challenge.
Response	The reviewers do not agree that the section suggests that the actuary has unfettered discretion and, therefore, made no change.
APPENDIX 1: BACKGROUND AND ADDITIONAL INFORMATION	
Role and Scope of ASOPs	
Comment	A commentator objected to the use of the phrase “to better define” in the first sentence.
Response	The reviewers agree and replaced the phrase “to better define” with “to clarify” in the first sentence.

ASOP No. 1—March 2013

Comment	A commentator indicated that the sentence below belongs in the body of the ASOP, not in appendix 1, because the commentator believes it is requiring the actuary to do something. “Because the ASOPs are not overly prescriptive, and allow for disclosed deviations, the ASOP framework is designed to accommodate the actuary’s providing high quality actuarial services and acting with integrity, taking all appropriate considerations into account.”
Response	The reviewers do not believe this sentence adds any guidance and, therefore, made no change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 2**

Revised Edition

**Nonguaranteed Elements
for Life Insurance and Annuity Products**

**Developed by the
Task Force to Revise ASOP No. 2 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2021**

Doc. No. 204

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September 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Nonguaranteed Elements for Life Insurance and Annuity Products

FROM: Actuarial Standards Board (ASB)

SUBJ: Revision of Actuarial Standard of Practice (ASOP) No. 2

This document contains the revision of ASOP No. 2, now titled *Nonguaranteed Elements for Life Insurance and Annuity Products*.

History of the Standard

In 1986, the Interim Actuarial Standards Board adopted the original version of ASOP No. 2, which was titled *The Redetermination (or Initial Determination) of Non-Guaranteed Charges and/or Benefits for Life Insurance and Annuity Contracts*. In 1990, the ASB adopted a reformatted version of ASOP No. 2. (Prior to 2013, ASOP No. 2 was numbered ASOP No. 1.)

In 1995, the ASB adopted ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*, which was created in conjunction with the National Association of Insurance Commissioners' (NAIC) *Life Insurance Illustrations Model Regulation* (the *Model*). Not all illustrated life insurance and annuity policies are subject to the *Model*. The 2004 revision of ASOP No. 2 imposed new obligations on the actuary for policy illustrations not subject to the *Model*.

Since ASOP No. 2 was last updated in 2004, there has been increased attention to the practices insurers use to determine and manage NGEs within individual life insurance and annuity products. The ASOP is being updated to reflect current practices and provide additional guidance on the determination of NGEs. In developing this revision, the task force reviewed and incorporated concepts from documents that supported the development of the original version of this ASOP in 1986.

First Exposure Draft

The first exposure draft was issued in March 2019 with a comment deadline of July 15, 2019. Sixteen comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was issued in July 2020 with a comment deadline of November 13, 2020. Seven comment letters were received and considered in making changes that are reflected in the final standard.

For a summary of issues contained in these comment letters, please see appendix 2.

Notable Changes from the Second Exposure Draft

Notable changes made to the second exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Section 1.2 was clarified to specify that actuarial services with respect to in-force policies performed after the effective date of this standard are in scope.
2. In section 2.5, the definition of NGE framework was clarified.
3. In section 2.6, the definition of NGE scales was clarified to include NGE scales that may vary by one or more parameters or may not vary by any parameter, and additional examples were provided.
4. Section 3.1 was updated to eliminate duplication with the definition of NGE framework in section 2.5.
5. In section 3.3.1, language was clarified to recognize that policy classes could be defined at various levels and to include methodology reflecting policy duration, and an example was added.
6. In section 3.4, changes were made to clarify the guidance in instances when following the determination policy would be inconsistent with section 3.2 and to clarify the language to improve alignment with section 3.2.
7. The language in section 3.4.1(g) was clarified to reference the determination policy rather than section 3.4.2.4.
8. In section 3.4.2.4, changes were made to improve consistency with section 3.4.2.3 and to clarify reliance on prior analysis.
9. In section 3.4.2.5, language was added to address circumstances where the insurer allocates past losses or gains.
10. In section 3.5, the language was changed to be consistent with the language in the existing ASOP.
11. In section 4.1, disclosure 4.1(q) was added to reflect changes in section 3.4.2.5.

Notable Changes to the Existing ASOP

A cumulative summary of the notable changes from the existing ASOP are summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. In section 1.2, the scope was clarified to exclude actuarial services with respect to the determination of any reinsurance contract elements that are not guaranteed.
2. In section 2, the definitions were expanded and clarified.
3. In sections 2.5 and 3.1, the concept of an insurer's NGE framework was defined and introduced.
4. In section 3.2, guidance was expanded for advising on the actuarial aspects of the determination policy, including advice that is consistent with the following:
 - a. NGE scales are determined with the expectation that they will be revised only if anticipated experience factors have changed since issue or, alternatively, since the previous revision; and
 - b. NGE scales are determined based on reasonable expectations of future experience and are not determined with the objective of recouping past losses or distributing past gains.
5. In section 3.3, guidance for establishing or making changes to policy classes was expanded.
6. In section 3.4, guidance for determining NGE scales was expanded to align with sections 3.2 and 3.3 and to include guidance on additional considerations that were not part of the previous determination of NGE scales.
7. In section 3.5, guidance for recommending NGE scales used in illustrations not subject to ASOP No. 24 was updated.
8. In section 3.6, guidance for providing opinions and disclosures to meet regulatory requirements was added.
9. In sections 3.7, 3.8, and 3.9, guidance for relying on data, projections, and supporting analysis supplied by others, relying on assumptions or methods selected by another party, and reliance on another actuary was added.
10. In section 3.10, documentation requirements were added.
11. In section 4, disclosure requirements were added, mostly to address expanded guidance throughout section 3.

ASOP No. 2—Doc. No. 204

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The ASB voted in September 2021 to adopt this standard.

ASOP No. 2—Doc. No. 204

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 2

**NONGUARANTEED ELEMENTS
FOR LIFE INSURANCE AND ANNUITY PRODUCTS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to the determination of **nonguaranteed elements** (NGEs) for life insurance and annuity products, including riders attached to such products.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to the determination and, if applicable, illustration of **NGEs** for life insurance and annuity **policies** written on individual **policy** forms where **NGEs** may vary at the discretion of the insurer, except as provided below. Actuarial services performed on or after the effective date of this standard also include determinations and illustrations for **policies** in force on the effective date of this standard.

Throughout this standard, the term “determination” includes both the initial determination at **policy** issue and subsequent determinations for in-force **policies**.

The standard also applies to actuaries when performing similar actuarial services for group master contracts with individual certificates where **NGEs** are determined in a similar manner to products written on individual life and annuity **policy** forms. Examples of products within the scope of this standard include universal life, indeterminate premium life, and deferred annuity products. Such products may be fixed, variable, or indexed.

Actuarial services for group products with **NGEs** that are not determined in a similar manner to those written on individual life and annuity **policy** forms are not in scope. Two examples are traditional group term life insurance and certain retirement funding products (for example, synthetic guaranteed interest contracts). To the extent that actuarial services for a product do not clearly fall into the scope, the actuary should use professional judgment to determine whether the services are in scope.

This standard does not apply to actuaries when performing actuarial services with respect to policyholder dividends, which are covered by ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*. To the extent that a product involves both **NGEs** and policyholder dividends, this standard applies to actuaries when performing actuarial services with respect to **NGEs**, and ASOP No. 15 applies to actuaries when performing actuarial services with respect to policyholder dividends.

This standard does not apply to actuaries when performing actuarial services with respect to the determination of any reinsurance contract elements that are not guaranteed in a reinsurance contract.

This standard does not apply to actuaries when performing actuarial services with respect to illustrations of **NGEs** subject to ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

If the actuary departs from the guidance set forth in this standard in order to comply with law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed on or after June 1, 2022.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Anticipated Experience Factor**—An assumption of future experience used in the determination of **NGEs**. Examples of **anticipated experience factors** include rates of investment income, mortality, morbidity, **policy persistency**, and expense.
- 2.2 **Determination Policy**—The insurer’s principles or objectives for determining **NGEs**. For example, the **determination policy** could include the insurer’s governing principles and requirements, profitability objectives, capital objectives, guidelines for drafting **policy** provisions related to **NGEs**, principles for addressing illustration requirements, and requirements for and frequency of reviews of **NGEs** on in-force products.
- 2.3 **Guaranteed Element**—A premium, value, charge, or benefit that limits an **NGE**. **Guaranteed elements** are specified in the **policy**. Examples of **guaranteed elements** include maximum premium charges, maximum expense charges, minimum credited interest rates, maximum cost of insurance charges, maximum gross premiums, minimum index parameters, maximum mortality and expense (M&E) risk charges, and maximum **policy** loan interest rates.

- 2.4 **Nonguaranteed Element (NGE)**—Any premium, charge, or benefit within an insurance **policy** that 1) affects **policy** costs or values, 2) is not guaranteed in the **policy**, and 3) can be changed at the discretion of the insurer. An **NGE** may provide a more favorable value to the policyholder than a **guaranteed element**. For the purpose of this ASOP, an **NGE** reflects expectations of future experience as opposed to, for example, a dividend, which reflects participation in past experience. Examples of premiums, charges, or benefits that can be changed at the discretion of the insurer may include credited interest, cost of insurance (COI) charges, bonuses, indeterminate premiums, index parameters used to determine credited interest, and expense charges.
- 2.5 **NGE Framework**—The **determination policy**, methodology for establishing **policy classes**, and any additional practices, methods, and criteria used by the insurer to determine **NGE scales** that might not be part of the **determination policy** or methodology for establishing **policy classes**.
- 2.6 **NGE Scale**—For each **NGE**, a series of one or more rates or values as determined by the insurer at a point in time. The elements of an **NGE scale** may vary by one or more parameters or may not vary by any parameter. Examples include the following:
- a. COI rates that could vary based on issue age, underwriting class, and duration;
 - b. an expense load that could vary by duration and be applicable over a limited number of **policy** years; and
 - c. an interest rate that does not vary by any parameter.
- 2.7 **Policy**—An individual life insurance **policy**, an individual annuity contract, or a group certificate that has **NGEs** that operate in substantially the same manner as **NGEs** in an individual life insurance **policy** or an individual annuity contract. A **policy** includes any attached rider or endorsement.
- 2.8 **Policy Class**—**Policies** that are grouped together for the purposes of determining an **NGE**.
- 2.9 **Profitability Metric**—A measurement used to assess a product's projected level of financial results.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **NGE Framework**—The actuary should understand the insurer's **NGE framework** in relation to the actuarial services requested. The actuary should understand how the **NGE framework** has been applied in the past in relation to the actuarial services requested, if available. The actuary should take into account the elements of the **NGE framework** that are relevant to the actuarial services requested. Examples of elements of the **NGE framework** include the following:

- a. the methodology for evaluating experience and developing **anticipated experience factors**;
- b. the source or sources of data used in developing **anticipated experience factors**;
- c. the frequency of review of **anticipated experience factors** and **policy classes**;
- d. the methodologies for allocating expenses and investment income;
- e. the models or methods used;
- f. the marketing objectives, such as distribution channels, target markets, and competitive objectives;
- g. the objectives used in setting **profitability metrics**;
- h. the methodology for determining reserves and capital objectives; and
- i. the insurer's governance process, including the decision and approval process.

If the **NGE framework** is absent, or in the actuary's professional judgment, is incomplete or needs to be updated to reflect the current environment, the actuary should recommend that the **NGE framework** be created, completed, or updated.

- 3.2 Providing Advice on the Actuarial Aspects of the Determination Policy—The actuary may provide advice on 1) developing or modifying the **determination policy**, or 2) applying the **determination policy**.

When providing advice on the actuarial aspects of the **determination policy**, the actuary should provide advice consistent with the following:

- a. **NGE scales** are determined with the expectation that they will be revised only if **anticipated experience factors** have changed since issue, or alternatively, since the previous revision.
- b. **NGE scales** are determined based on reasonable expectations of future experience and are not determined with the objective of recouping past losses or distributing past gains.

- 3.2.1 Providing Advice on Developing or Modifying the Determination Policy—When advising an insurer on developing or modifying its **determination policy**, the actuary should take into account the following, if applicable:

- a. the **policy** provisions and applicable law;

- b. how **anticipated experience factors** reflect expectations of future experience;
- c. how the variability and credibility of each **anticipated experience factor** may impact the determination of the **NGE scales**;
- d. the insurer's reserve, profitability, capital, surplus, and marketing objectives;
- e. reinsurance and taxes; and
- f. periodic review of **NGEs** in in-force **policies**, such as the maximum time period between successive insurer reviews of **NGEs**.

The actuary may take into account other items relevant to the **determination policy**.

The actuary should document the sources of the **determination policy** used in developing the advice and how (a)–(f) above and any additional relevant items were taken into account. For example, portions of the **determination policy** may be found in the insurer's governance processes, corporate policies, or operating practices.

3.2.2 Providing Advice on Applying the Determination Policy—When advising on applying the **determination policy** for determining initial **NGE scales**, evaluating whether to revise existing **NGE scales**, or revising existing **NGE scales**, the actuary should take into account the following, if applicable:

- a. the need to make additional assumptions about how the **determination policy** applies to the assignment;
- b. **guaranteed elements**, policyholder options including the likelihood of antiselection, and other relevant provisions of the **policy**;
- c. impacts on or from reserve, profitability, capital, surplus, and marketing objectives, or changes in such objectives;
- d. impact on or from reinsurance and taxation;
- e. applicable law (including, for example, for variable products, any constraints or other requirements imposed by applicable securities law); and
- f. resources available.

If, in the actuary's professional judgment, the actuary believes that the **determination policy** may be inconsistent with the guidance in sections 3.2 and 3.2.1, the actuary should recommend that the **determination policy** be revised.

3.3 **Establishment of or Changes to Policy Classes**—When preparing for an assignment, the actuary should review the existing **policy classes** for the product or similar products within the insurer's **NGE framework**.

3.3.1 **For Future Sales of a New or Existing Product**—If the **policy classes** for future sales have not been defined in the **NGE framework**, or if they have been defined, but in the actuary's professional judgment are incomplete, do not reflect changing circumstances (for example, new underwriting practices, or new profit or marketing objectives), or are inconsistent with the items below, the actuary should recommend the establishment of or changes to the **policy classes** that are

- a. consistent with the guidance in ASOP No. 12, *Risk Classification*;
- b. appropriate for each **NGE** (a particular **policy** may be assigned to one or more **policy classes** at issue based on **anticipated experience factors** and **NGEs**, for example, one **policy class** for credited interest and a different **policy class** for COI charges);
- c. appropriately reflective of differences within **anticipated experience factors** (for example, smoker versus nonsmoker mortality);
- d. refined appropriately to mitigate antiselection; and
- e. not expected to be redefined after issue.

Policy classes may be defined by grouping **policies** at various levels, for example, at a product level, across multiple products, or within a product or products.

The actuary may recommend **policy classes** that use different grouping methodologies based on **policy** duration. For example, a **policy class** may be defined in terms of a select and ultimate mortality method, or a **policy class** may be defined in terms of an investment year interest crediting method that uses a new money method in the early durations and a portfolio method in the later durations.

When recommending **policy classes** for future sales, the actuary should take into account the **policy** provisions, the structure of **guaranteed elements** and **NGEs**, the date on which the recommended **policy classes** would take effect (for example, **policies** issued before or after a particular date could be in different **policy classes**), and the underwriting characteristics and marketing objectives for the product. The actuary may also take into account any additional relevant factors.

3.3.2 **For In-Force Policies**—The actuary should recommend that in-force **policies** remain assigned to their **policy classes**, unless there is new information that is material to the **anticipated experience factors** and supports reassigning the **policies** to different **policy classes**. For example, a change in one state’s premium tax that affects some **policies** within a **policy class** differently than it affects others could justify reassigning such **policies** to a different **policy class**.

In addition, the actuary may recommend combining or redefining **policy classes** if, in the actuary’s professional judgment, such combinations or redefinitions would be appropriate. For example, if the experience for a **policy class** is not credible, the **policy class** could be combined with other **policy classes** for the purposes of determining **anticipated experience factors**.

When recommending a change in the assignment of **policies to policy classes**, or combining or redefining **policy classes**, the actuary should follow the guidance in section 3.3.1.

3.4 **Determination Process for NGE Scales**—When determining **NGE scales** for future sales of a new or existing product and for in-force **policies** in accordance with the **NGE framework**, the actuary should take into account the **determination policy** and the following:

- a. the appropriateness of the models, methods, and **profitability metrics**;
- b. how the **anticipated experience factors** relate to **NGE scales**;
- c. the consistency of **NGE scales** with **policy** provisions;
- d. any limits on **NGE scales** due to regulatory constraints;
- e. any limits on **NGE scales** due to **guaranteed elements**; and
- f. the impact on or from reserve, profitability, capital, surplus, and marketing objectives.

The actuary may take into account practical constraints and any other relevant circumstances.

The actuary may use approximation methods, such as smoothing and interpolation, when determining **NGE scales**.

If, in the actuary’s professional judgment, the actuary believes that following the **determination policy** when determining **NGE scales** would be inconsistent with the guidance in section 3.2, the actuary should consider discussing these inconsistencies with the insurer. The actuary should document any unresolved inconsistencies and should consider providing advice consistent with section 3.2.2.

3.4.1 **Determination Process for Future Sales of a New or Existing Product**—When determining **NGE scales** for future sales of a new or existing product, the actuary should take into account the following:

- a. how **anticipated experience factors** were developed and whether they reflect the product's features, intended markets, distribution methods, underwriting procedures, and **policy classes** (see section 3.3.1);
- b. how **NGE scales** are structured to cover costs under the product design, as well as the potential impact on profitability if policyholder behavior varies from expectations;
- c. that **NGE scales** are determined with the expectation that they will not be revised unless the **anticipated experience factors** change;
- d. whether the **NGE scales** are consistent with the language of the **policy**;
- e. projected profitability;
- f. constraints on the ability to revise **NGE scales** to reflect future changes in **anticipated experience factors** (for example, **guaranteed elements**, contractual limitations, development and implementation cost, systems constraints); and
- g. how elements of the **determination policy** affect the ability to revise **NGE scales** after issue.

The actuary may use prior analysis in the determination of the **NGE scales**, if appropriate. For example, changes in credited interest may be based on a previously established interest rate spread.

The actuary should document the **NGE** determination process and results, including how items (a)–(g) and any prior analysis were taken into account.

The actuary should consider conducting sensitivity analyses to evaluate the impact of future deviations from the anticipated experience. The actuary should consider recommending how often such **anticipated experience factors** be reviewed.

3.4.2 **Determination Process for In-Force Policies**—The determination process for in-force **policies** consists of reviewing prior determinations, analyzing emerging experience relative to **anticipated experience factors**, considering whether to recommend a revision in the **NGE scales**, and, if a revision is to be made, determining the revised **NGE scales**.

- 3.4.2.1 **Reviewing Prior Determinations**—The actuary should review prior determinations, including the original determination in effect at the time of **policy** issue. This may include information such as previous **anticipated experience factors, profitability metrics**, pattern of profits, **NGE scales**, and other assumptions.

If the information related to prior determinations is not available or incomplete, the actuary should reconstruct prior determinations to the extent practicable and necessary for the determination process, and document the methods and assumptions used. If reconstructing the prior determinations is not practicable due to incomplete information or other limitations, the actuary should select and document a reasonable approach to gain an understanding of the prior determination.

- 3.4.2.2 **Analyzing Experience**—When analyzing how experience is emerging relative to **anticipated experience factors**, the actuary should take into account the following, if applicable:

- a. the time elapsed since the last analysis of experience;
- b. the credibility of experience;
- c. the size of the relevant group of **policies or policy classes**, such as number of **policies**, premium volume, insurance amount, or account value;
- d. the materiality of any change in the experience relative to the existing **anticipated experience factors**;
- e. whether existing **anticipated experience factors**, including any projected trends, are supported by actual experience; and
- f. whether profitability was particularly sensitive to changes in any **anticipated experience factors**, as disclosed in previous actuarial reports.

The actuary should recommend that the **anticipated experience factors** be updated, if warranted by the results of the analysis.

The actuary should document how (a)–(f) above and any additional relevant items were taken into account.

- 3.4.2.3 **Considering Whether to Recommend a Revision to NGE Scales**—When considering whether to recommend a revision to **NGE scales**, the actuary should take into account the following, if applicable:

- a. time elapsed since **NGE scales** were last reviewed;
- b. the **anticipated experience factors** that are used for revising **NGE scales** under the terms of the **policy** and applicable law;
- c. deviations in emerging experience from what was assumed in the prior determination of **NGE scales**;
- d. how any recommended revision could affect reserves, capital, reinsurance, and taxation;
- e. the appropriateness of the **profitability metrics** and objectives. For example, an internal rate of return metric may have been used at **policy** issue, but a different metric may be appropriate when applied to in-force **policies**;
- f. the change in the prospective profitability due to the change in **anticipated experience factors** and any additional factors for which a change may be reflected in the determination of **NGEs** under section 3.2(b), the terms of the **policy**, and applicable law;
- g. the complexity of the analysis needed. For example, when changing credited interest rates, the actuary may limit the analysis to changes in investment income, while other changes, such as COIs, may require more complex analysis and modeling, which could reflect multiple **anticipated experience factors** and require consideration of other **NGEs**;
- h. whether other analyses, such as sensitivity analysis, are needed;
- i. costs, practical implementation difficulties, and materiality of making revisions to the **NGE scale**; and
- j. potential impacts on the policyholder (for example, policyholder behavior or policyholder equity) or the insurer of revising or not revising **NGE scales** to reflect changes in **anticipated experience factors**.

The actuary should document the results of the analysis, including how (a)-(j) above and any additional relevant items were taken into account, whether the actuary recommends a revision or not.

- 3.4.2.4 **Determining the Revised NGE Scales**—When determining revised **NGE scales**, the actuary should take into account the provisions of section 3.4.1(a)-(g) and should

- a. identify the **anticipated experience factors** to be used when revising **NGE scales**, taking into account the terms of the **policy** and applicable law;
- b. base the revision of the **NGE scales** on changes in the **anticipated experience factors** identified in (a) above; and
- c. determine new **NGE scales** using a method that is consistent with sections 3.2(a) and 3.2(b). For example, it might be appropriate to use a method to determine the revised **NGE scales** such that the prospective profitability from the time of revision, taking into account the prospective pattern of profits by duration, is not materially greater than that using the original **NGE scales** and original **anticipated experience factors**, holding all other assumptions constant between the projections.

The actuary may use approximation and smoothing methods that are reasonable in relation to the costs and benefits provided.

The actuary should perform an appropriate level of analysis based on the **anticipated experience factors** and the type of revision being considered. The actuary may use relevant prior analysis in making the determination. For example, as discussed in section 3.4.2.3(g), changing COIs may require more complex analysis and modeling than routine changes in credited interest rates, which may rely on prior interest rate spread analysis. The actuary should ensure that the method and results of any analysis used to support the determination of the revised **NGE scales**, including how the provisions of section 3.4.1(a)-(g) and any additional relevant items as noted above were taken into account, are documented or addressed in prior documentation.

- 3.4.2.5 **Additional Considerations**—When recommending or determining a revision to **NGE scales**, the actuary may consider using additional **anticipated experience factors** that were not part of the previous determination of **NGE scales**, such as a new tax-related expense.

If circumstances arise under which the insurer allocates past losses or gains by making adjustments to the **NGE scales**, for example, due to regulatory requirements, the actuary should document the circumstances and should consider recommending a methodology to separately account for such adjustments when considering future determinations of the **NGE scales**.

- 3.5 **NGEs Used in Illustrations Not Subject to ASOP No. 24**—The actuary should recommend **NGE scales** to be used in illustrations not subject to ASOP No. 24 that have been determined consistently with section 3.4. The actuary should also follow applicable

regulations, guidelines, and standards for illustrations, such as those that are based upon the following:

- a. *Annuity Disclosure Model Regulation* (Model 245); and
- b. *Variable Life Insurance Model Regulation* (Model 270) and NAIC Actuarial Guideline 15.

The actuary should consider conducting tests of illustrated **NGE scales** to ascertain whether those illustrated **NGE scales** could be supported by **anticipated experience factors** and other reasonable assumptions.

- 3.6 **Providing Opinions and Disclosures to Meet Regulatory Requirements**—When providing opinions and disclosures to meet regulatory requirements relating to **NGEs** (for example, a response to an NAIC annual statement interrogatory) or actuarial services in support of such opinions and disclosures, the actuary should be knowledgeable about the requirements and information necessary to support the opinion or disclosure. Such information may include some or all of the following for the relevant products:
- a. the insurer's **NGE framework**;
 - b. the requirements of applicable law;
 - c. the determination process, including how experience and financial results are emerging; and
 - d. previous regulatory filings.
- 3.7 **Reliance on Others for Data, Projections, and Supporting Analysis**—The actuary may rely on data, projections, and supporting analysis supplied by others. When practicable, the actuary should review the data, projections, and supporting analysis for reasonableness and consistency. For further guidance, the actuary should refer to ASOP No. 23, ASOP No. 41, *Actuarial Communications*, and ASOP No. 56, *Modeling*. The actuary should disclose the extent of any such reliance.
- 3.8 **Reliance on Assumptions or Methods Selected by Another Party**—When relying on assumptions or methods selected by another party, the actuary should refer to ASOP No. 41 for guidance. The actuary should disclose the extent of any such reliance.
- 3.9 **Reliance on Another Actuary**—The actuary may rely on another actuary who has performed actuarial services related to the determination of **NGEs**. However, the relying actuary should be reasonably satisfied that the other actuary is qualified to perform the actuarial service, the actuarial service was performed in accordance with applicable ASOPs, and the actuarial service performed is appropriate for the objective of the assignment. The actuary should disclose the extent of any such reliance.

3.10 **Documentation**—In addition to the documentation requirements throughout the rest of section 3, the actuary should consider preparing and retaining documentation to support compliance with the remaining requirements of section 3 and the disclosure requirements of section 4. When preparing documentation, the actuary should prepare it in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work. The degree of documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 12, 23, 41, and 56. In addition, the actuary should disclose the following (if applicable):
- a. any recommendations that were made with respect to developing, completing, or updating the **NGE framework** (see section 3.1);
 - b. advice the actuary provided on developing or modifying the **determination policy** (see sections 3.2 and 3.2.1);
 - c. advice the actuary provided on how to apply the **determination policy**, including any advice that was inconsistent with the **determination policy** in order to follow the guidance in sections 3.2 or that was inconsistent with the guidance in sections 3.2 in order to comply with the **determination policy**, and the rationale for such inconsistencies (see section 3.2);
 - d. recommendations made by the actuary to establish or change **policy classes** for future sales of a new or existing product (see sections 3.3.1 and 3.4.1[a]);
 - e. recommendations made by the actuary for reassignment of in-force **policies** to different **policy classes** (see section 3.3.2);
 - f. any inconsistency with the **determination policy** and the guidance in section 3.2 when determining **NGE scales** (see section 3.4);
 - g. a description of the **anticipated experience factors** used in the determination of **NGEs** and any changes to such factors since any prior determination (see sections 3.4.1 and 3.4.2);
 - h. a description of any material constraints on the ability to revise **NGE scales** (see sections 3.4.1[f] and [g] and 3.4.2.4);
 - i. results, observations, or recommendations from the determination process for **NGE scales** for future sales of a new or existing product, including results and

- observations from any profitability analysis or sensitivity analysis (see section 3.4.1);
- j. observations from the analysis that indicate that the profitability is particularly sensitive to changes in certain **anticipated experience factors** (see sections 3.4.1 and 3.4.2.3[h]);
 - k. any use of prior analysis (see section 3.4.1 and 3.4.2.4);
 - l. any reconstructed prior determinations or reasonable approaches used when reconstructing the prior determinations was not possible (see section 3.4.2.1);
 - m. any recommendation that **anticipated experience factors** be updated and how these updated factors were taken into account when recommending changes to **NGE scales** (see section 3.4.2.2);
 - n. observations or recommendations to revise or not revise in-force **NGE scales**, including results from any profitability or sensitivity analysis (see section 3.4.2.3);
 - o. results, observations, or recommendations from the determination process used to support any revisions to **NGE scales** for in-force **policies**, including results and observations from any analysis (see section 3.4.2.4);
 - p. the circumstances and rationale for using any additional **anticipated experience factors** that were not part of the previous determination of **NGE scales** (see section 3.4.2.5);
 - q. the circumstances under which the insurer allocates past losses or gains by making adjustments to the **NGE scales** and any recommendations for a methodology to separately account for such adjustments when considering future determinations of the **NGE scales** (see section 3.4.2.5); and
 - r. results from any tests of illustrated **NGE scales** not subject to ASOP No. 24 to ascertain whether those illustrated **NGE scales** could be supported by **anticipated experience factors** and other reasonable assumptions (see section 3.5).
 - s. extent of any reliance on the data, projections, and supporting analysis of others (see section 3.7);
 - t. extent of any reliance on assumptions or methods selected by another party (see section 3.8); and
 - u. extent of any reliance on another actuary (see section 3.9).

4.2 **Additional Disclosures in an Actuarial Report**—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:

- a. if any material assumption or method was prescribed by applicable law;
- b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

In the mid-1970s, activity increased with respect to individual life and annuity products with nonguaranteed elements (NGEs) as opposed to dividends under traditional participating policies.

Because of the increased activity on these products, they came to represent significant market share and financial significance, and it was deemed necessary to develop an actuarial standard of practice in this area. Thus, the Interim Actuarial Standards Board adopted the original version of this ASOP as ASOP No. 1 in October 1986. (Prior to 2013, ASOP No. 2 was known as ASOP No. 1.) The Actuarial Standards Board adopted a reformatted version of ASOP No. 1 in 1990.

In 1986, the policies in question were still evolving, and there was little standardization in areas such as benefit design, pricing structure, marketing practices, and investment philosophies. It was therefore impossible for the standard to offer guidance on these issues. Rather, the standard reflected that the actuary's essential obligations were (1) to assure the completion of all activities required to advise the client professionally, and (2) to prepare an actuarial communication for the client presenting this advice.

By the early 2000s, the volume of these products sold had continued to grow, and considerable product innovation had taken place. ASOP No. 1 was revised to reflect this new environment. It was also revised to be consistent, where appropriate, with ASOP No. 15, *Dividend Determination for Participating Individual Life Insurance Policies and Annuity Contracts*, and ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*. The resulting revision of ASOP No. 1 was adopted in March 2004.

In May 2011, ASOP No. 1 was updated for deviation language, and in March 2013, it was renumbered ASOP No. 2.

In recent years, further developments affecting products with NGEs have taken place, such as the following:

- continued increase in the sales of products with NGEs;
- continued product evolution, including index features, persistency bonuses, living benefit riders, secondary guarantees, and new ancillary benefits;
- advances in actuarial techniques for modeling, stochastic testing, and sensitivity analysis;
- changes in life insurance company taxation, reserve valuation, and capital objectives;

- enhancement of insurer governance procedures with respect to the determination of NGEs;
- increased public awareness of changes to NGEs for in-force policies; and
- increased regulation of NGEs, such as the promulgation of New York Regulation 210 in March 2018.

In response to such developments, actuarial practices have evolved, and ASOP No. 2 has been updated to reflect these changes.

Current Practices

The actuary may provide professional services in three principal areas with respect to NGEs. The actuary is normally involved in the determination of NGE scales in accordance with insurer determination policy. The actuary may also be involved in advising the insurer on setting the determination policy or the establishment of or changes to policy classes. When determining NGEs, the actuary considers corporate governance practices, policy administration, regulation, marketing objectives, and consumer expectations, among other factors.

The actuary may be called upon to determine NGE scales for future sales of a new or existing product and for in-force policies. Although the steps needed to complete these two broad categories of assignments have many common elements, there are significant differences with respect to the principles, methodologies, and criteria that are commonly followed.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Nonguaranteed Elements for Life Insurance and Annuity Products*, was issued in July 2020 with a comment deadline of November 13, 2020. Seven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 2 Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The ASB Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in this appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 2 Task Force, the ASB Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested defining “take into account” because it is unclear how it differs from “consider” or “reflect.”
Response	<p>The reviewers do not believe “take into account” or “reflect” require definitions that differ from the ordinary English definitions. Note that the term “should consider” is discussed in ASOP No. 1, <i>Introductory Standard of Practice</i>. ASOP No. 1 states,</p> <p style="padding-left: 40px;">The terms “must” and “should” are generally followed by a verb or phrase denoting action(s), such as “disclose,” “document,” “consider,” or “take into account.” For example, the phrase “should consider” is often used to suggest potential courses of action. If, after consideration, in the actuary’s professional judgment an action is not appropriate, the action is not required and failure to take this action is not a deviation from the guidance in the standard.</p> <p>Therefore, the reviewers made no change in response to this comment.</p>
Comment	One commentator requested that the ASOP be reviewed for applicability to annuities.
Response	The reviewers note that section 1.2 describes which annuities are in scope and added examples applicable to both life and annuities throughout the ASOP.
Comment	One commentator suggested differentiating between routine NGE changes and more complex NGE changes.
Response	The reviewers clarified the language in section 3.4.2.4 in response to this comment.
Comment	One commentator requested more guidance on the initial determination.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.

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Comment	One commentator said that it is unclear whether the actuary can improve an NGE or reverse an increase without the full analysis described in the ASOP.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator was concerned that the ASOP poses limitations on alternative rate-setting processes, such as following an established plan (such as tracking an index or market rates).
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator said that the ASOP was written for a consultant and not a company actuary.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Section 1.2, Scope	
Comment	One commentator suggested adding language to clarify that the ASOP is not retroactively applicable to prior determinations before the effective date of the ASOP.
Response	The reviewers clarified the language.
Comment	One commentator suggested moving the sentence “Throughout this standard, the term determination includes both initial determination and subsequent redeterminations” to section 1.1.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested adding “to the extent possible” when referring to future determinations of in-force products after the effective date to provide sufficient flexibility.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator noted that ASOP No. 15, <i>Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance</i> , does not appear to define “dividend” and suggested adding a definition to ASOP No. 2.
Response	The reviewers disagree with the suggestion and made no change in response to this comment. The reviewers note that section 2.4 states “For the purpose of this ASOP, an NGE reflects expectations of future experience as opposed to, for example, a dividend, which reflects participation in past experience.”

Section 1.4, Effective Date

Comment	One commentator suggested an effective date six months after approval by the ASB.
Response	The reviewers note the effective date is June 1, 2022.

SECTION 2. DEFINITIONS

Section 2.1, Anticipated Experience Factor	
Comment	One commentator suggested adding “may include but are not limited to” before the list of examples.
Response	The reviewers note that examples are illustrative, not exhaustive, and made no change.
Comment	One commentator suggested clarifying whether “rates of” applies to investment income only or the entire list.
Response	The reviewers believe the language is appropriate and made no change.

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Comment	One commentator suggested modifying the example to reference policyholder elections.
Response	The reviewers disagree and made no change.
Section 2.3, Guaranteed Element	
Comment	One commentator suggested adding “typically” before “specified in the policy” and in the example sentence.
Response	The reviewers believe the language is appropriate and made no change.
Section 2.4, Nonguaranteed Element	
Comment	One commentator suggested rewording the second sentence for clarity.
Response	The reviewers agree and clarified the language accordingly.
Comment	One commentator suggested changing “can be changed at the discretion of the insurer” to “may be changed...”
Response	The reviewers disagree and made no change.
Section 2.6, NGE Scale	
Comment	One commentator suggested either deleting NGE scale as a defined term or referencing anticipated experience factors in the definition.
Response	The reviewers disagree with the suggestion but clarified the language and added examples.
Section 2.9, Profitability Metric	
Comment	One commentator suggested revising the language to replace “a product’s expected level of financial results” with “projected profitability.”
Response	The reviewers changed “expected” to “projected” based on this comment.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, NGE Framework	
Comment	Two commentators suggested the difference between the determination policy and the NGE framework is unclear and suggested incorporating the concept of the NGE framework into the determination policy.
Response	The reviewers disagree with the suggestion to incorporate the concept of the NGE framework into the determination policy but clarified the language in sections 2.5 and 3.1.
Comment	One commentator suggested deleting the examples and moving them to the definition of NGE framework, because it is unclear whether the list is intended to be a documentation requirement.
Response	The reviewers disagree with moving the examples and refer the commentator to sections 3.10 and 4.1(a) with respect to documentation and disclosure.
Section 3.1(e) (now section 3.1[d])	
Comment	One commentator suggested deleting 3.1(e), methodology for allocating income and costs.
Response	The reviewers clarified the language.
Section 3.1(g) (now section 3.1[f])	
Comment	One commentator suggested deleting “distribution strategy” from section 3.1(g).
Response	The reviewers changed “distribution strategy” to “distribution channels” (now 3.1[f]).

Section 3.2, Providing Advice on the Actuarial Aspects of the Determination Policy	
Comment	One commentator suggested combining sections 3.2 and 3.4.
Response	The reviewers believe the guidance is appropriate and made no change.
Section 3.2(a)	
Comment	Several commentators suggested deleting or modifying sections 3.2(a), 3.4.1(c), and 3.4.2.4 because the language is too prescriptive and best left to regulation.
Response	The reviewers believe the guidance is appropriate and made no change in response to these comments.
Section 3.2(b)	
Comment	Several commentators expressed concern about the phrase “recouping past losses or distributing past gains” being too prescriptive or ambiguous and suggested either deleting that language or inserting “if required by statute or regulation” as a condition.
Response	The reviewers disagree but added clarifying language to section 3.4.2.5 to address this comment.
Comment	One commentator suggested adding back the guidance from the first exposure draft regarding prospective pattern of profits by duration in sections 3.2(b), 3.4.1(g), and 3.4.2.4(c).
Response	The reviewers believe the guidance is appropriate and therefore made no change.
Section 3.2.1, Providing Advice on Developing or Modifying the Determination Policy	
Comment	One commentator suggested replacing the list (a)-(f) with a reference to section 3.1.
Response	The reviewers clarified the language in section 3.1 and the definition of NGE framework in section 2.5, but made no change to this section in response to this comment.
Section 3.2.2, Providing Advice on Applying the Determination Policy	
Comment	One commentator suggested combining this section with section 3.2.1.
Response	The reviewers disagree and made no change.
Section 3.2.2(b)	
Comment	One commentator suggested coordinating the reference to options with language in ASOP No. 7, <i>Analysis of Life, Health, or Property/Casualty Insurer Cash Flows</i> , on materiality, likelihood of antiselection, and impact on profitability metrics (“cash flows”).
Response	The reviewers added clarifying language to section 3.2.2(b).
Section 3.2.2(d)	
Comment	One commentator stated that the reference to reinsurance may be misconstrued as a requirement for post-reinsurance pricing.
Response	The reviewers disagree and made no change.
Section 3.3, Establishment of or Changes to Policy Classes	
Comment	One commentator suggested providing more guidance on the term “review.”
Response	The reviewers believe the guidance is appropriate and therefore made no change.
Comment	One commentator suggested adding consideration of contractual provisions before establishing or changing policy classes.
Response	The reviewers believe the guidance is appropriate and note that section 3.3.1 states that “the actuary should take into account the policy provisions.”

Section 3.3.1, For Future Sales of a New or Existing Product	
Section 3.3.1(b)	
Comment	One commentator disagreed that policies can be assigned to more than one policy class.
Response	The reviewers believe the guidance is appropriate and made no change.
Section 3.3.1(e)	
Comment	One commentator suggested deleting the item that says that the actuary should not expect to redefine policy classes after issue.
Response	The reviewers added clarifying language and examples to section 3.3.1.
Comment	One commentator suggested adding “unless changes in anticipated experiences support changes to policy classes.”
Response	The reviewers made no change in this section but added clarifying language to address redefinition of policy classes after issue in section 3.3.2.
Section 3.3.2, For In-Force Policies	
Comment	One commentator stated that this section should recognize that some policies cannot be reassigned if the actuary is limited by contract language.
Response	The reviewers believe this is covered in the requirement to follow the guidance in section 3.3.1 and made no change in response to this comment.
Comment	One commentator suggested identifying and using a different example.
Response	The reviewers believe the example is appropriate and made no change.
Section 3.4, Determination Process for NGE Scales	
Comment	One commentator suggested adding “the actuary should consider discussing these differences with management” in the last paragraph of section 3.4.
Response	The reviewers added clarifying language to section 3.4.
Comment	One commentator questioned using the word “relationship” in (b) and (f).
Response	The reviewers clarified the language in sections 3.4(b) and (f) in response to this comment.
Comment	One commentator suggested combining sections 3.2 and 3.4.
Response	The reviewers disagree with combining sections 3.2 and 3.4 but clarified the language in section 3.4 to reference section 3.2 in its entirety.
Comment	One commentator suggested that sections 3.4(f), 3.2.2(c), and 3.2.1(e) are inconsistent.
Response	The reviewers clarified the language in these sections to improve consistency.
Section 3.4.1, Determination Process for Future Sales of a New or Existing Product	
Comment	Two commentators suggested adding “if applicable” after “following.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator questioned whether the section works for rates based on the market or based on an index.
Response	The reviewers added clarifying language to the definition of Nonguaranteed Element (NGE) in section 2.4 in response to this comment.

ASOP No. 2—Doc. No. 204

Comment	One commentator suggested that there is a bias in this section toward negative NGE changes and toward changes that are made infrequently, such as COI.
Response	The reviewers disagree that the language is biased toward negative NGE changes. The reviewers added an example of a change that could be made more frequently.
Section 3.4.1(d)	
Comment	One commentator suggested (d) was redundant with (f) and suggested deleting (d).
Response	The reviewers disagree and made no change.
Section 3.4.1(g)	
Comment	One commentator found the reference to section 3.4.2.4, which then refers to section 3.2, circular and confusing and suggested deleting (g).
Response	The reviewers deleted the reference to section 3.4.2.4 and clarified the language in response to this comment.
Section 3.4.2, Determination Process for In-Force Policies	
Comment	One commentator said that it is unclear whether the anticipated experience factors being referenced are those that were identified in the past, those that are currently experienced, or those that are expected in the future.
Response	The reviewers believe the language of this section, as well as the definition of anticipated experience factor in section 2.1, is clear and made no change.
Section 3.4.2.1, Reviewing Prior Determinations	
Comment	One commentator suggested adding “may” in the second sentence of the first paragraph.
Response	The reviewers agree and made the change.
Section 3.4.2.2, Analyzing Experience	
Comment	One commentator said that this section could be interpreted as saying that favorable past experience must be reflected in future anticipated experience factors and asked for clarification.
Response	The reviewers disagree and made no change.
Comment	One commentator noted that experience can come from a variety of sources.
Response	The reviewers added item (b) to the list of examples in section 3.1 in response to this comment.
Comment	One commentator said this section should not be limited to the determination of in-force policies.
Response	The reviewers note section 3.4.1(a) addresses consideration of how experience factors were developed for future sales of a new or existing product and therefore made no change in response to this comment.
Section 3.4.2.3, Considering Whether to Recommend a Revision to NGE Scales	
Section 3.4.2.3(e)	
Comment	One commentator suggested replacing “at issue” and “in force” with “determination” and “redetermination,” respectively.
Response	The reviewers disagreed with the suggestion but clarified the use of the term “determination” in section 1.2 in response to this comment.

Section 3.4.2.3(j)	
Comment	One commentator suggested replacing “policyholder” with “policyholder behavior.”
Response	The reviewers clarified the language.
Section 3.4.2.4, Determining the Revised NGE Scales	
Comment	One commentator questioned whether the reference to section 3.2 in this section conflicts with the reference to section 3.2 in the last paragraph of section 3.4.
Response	The reviewers clarified the language in the last paragraph of section 3.4.
Comment	One commentator suggested replacing “appropriate level of analysis” with language more similar to 3.4.2.3(g).
Response	The reviewers believe the guidance is appropriate and made no change.
Comment	One commentator suggested combining sections 3.4.2.4 and 3.4.2.3.
Response	The reviewers believe the guidance is appropriate and made no change.
Section 3.4.2.4(a)	
Comment	Two commentators suggested deleting section 3.4.2.4(a) because “the reference to ‘under the terms of the policy and applicable law’ makes this a legal question, not an actuarial one.”
Response	The reviewers clarified the language.
Section 3.4.2.4(c)	
Comment	Two commentators suggested deleting the “prospective pattern of profits by duration” from the example because it was too prescriptive.
Response	The reviewers clarified the language.
Comment	One commentator suggested deleting the entire example because this method may not be required by regulation.
Response	The reviewers kept the example but clarified the language.
Section 3.4.2.5, Additional Considerations	
Comment	One commentator suggested adding an example.
Response	The reviewers added an example.
Section 3.5, NGEs Used in Illustrations Not Subject to ASOP No. 24	
Comment	One commentator suggested deleting this section, the related disclosure in section 4.1(q), and language related to ASOP No. 24, <i>Compliance with the NAIC Life Insurance Illustrations Model Regulation</i> , in section 1.2.
Response	The reviewers disagree but clarified language related to illustrations not subject to ASOP No. 24.
Section 3.6, Providing Regulatory Opinions and Disclosures (now Providing Opinions and Disclosures to Meet Regulatory Requirements)	
Comment	One commentator suggested clarifying the meaning of “regulatory opinion.”
Response	The reviewers clarified the language.

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
4.1, Required Disclosures in an Actuarial Report	
4.1 (p)	
Comment	One commentator suggested combining sections 4.1(p) and (g) because new anticipated experience factors don't need special documentation.
Response	The reviewers disagree and made no change.



**Actuarial Standard
of Practice
No. 3**

Revised Edition

**Continuing Care Retirement Communities
and At Home Programs**

**Developed by the
ASOP No. 3 Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2021**

Doc. No. 202

ASOP No. 3—Doc. No. 202

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September 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Continuing Care Retirement Communities and At Home Programs

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 3

This document contains the revision of ASOP No. 3, *Continuing Care Retirement Communities and At Home Programs*.

History of the Standard

In 1987, the Interim Actuarial Standards Board adopted a document titled *Relating to Continuing Care Retirement Communities (CCRCs)*. In 1990, the ASB revised and reformatted ASOP No. 3, *Relating to Continuing Care Retirement Communities*. In 1994, the ASB adopted another revision titled *Practices Relating to Continuing Care Retirement Communities*. In 2008, the standard was revised to reflect current, generally accepted actuarial practice and to adopt the updated format for standards. The industry also refers to Continuing Care Retirement Communities (CCRCs) as Life Plan Communities (LPCs), and for the purpose of this standard CCRCs refers to both CCRCs and LPCs.

Within CCRCs, the provision of benefits through At Home Programs has emerged as a new area of practice. Various terms are used in the industry to describe At Home Programs, which are most commonly known as Continuing Care At Home and Lifecare At Home Programs. This ASOP addresses actuarial practice for both CCRCs and At Home Programs. For the purposes of this ASOP, the term “CCRC” reflects the traditional industry product and the term “At Home Program” reflects benefits offered to members who are not residents.

CCRCs arose from a desire of individuals to have both housing and long-term care provided by the same organization. Over time, the CCRC model has evolved, with contracts providing for individuals who have delayed entry to a CCRC as well as individuals who may have never intended to move into a CCRC. At Home Programs cover members who do not intend to move into the CCRC. Many states have developed regulations to address both traditional CCRCs and At Home Programs under the CCRC umbrella. Several states limit At Home Programs to the confines of an existing CCRC.

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Exposure Draft

The exposure draft was issued in November 2020 with a comment deadline of February 1, 2021. Five comment letters were received and considered in making changes that are reflected in the final ASOP.

Notable Changes from Exposure Draft

Notable changes made to the exposure draft are summarized below. Notable changes do not include changes made to improve readability, clarity, or consistency.

1. The terms “resident” and “non-resident” were replaced with “contractual resident” and “non-contractual resident” throughout the ASOP.
2. Examples of services covered by the ASOP proposed to be deleted in the exposure draft were restored in section 1.2, Scope.
3. A definition for “occupancy rate” was added in section 2.20, and the occupancy rate assumption was included in section 3.7.1, Actuarial Assumptions.
4. Guidance was clarified regarding the consistency among related assumptions in section 3.7.6, Reasonableness of Assumptions.
5. Guidance was clarified to state that the combined effect of financial and demographic assumptions is expected to have no significant bias except for margins for uncertainty in section 3.7.6, Reasonableness of Assumptions.

Notable Changes from the Existing ASOP

A cumulative summary of the notable changes from the existing ASOP is summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. The ASOP was revised to address actuarial practice for At Home Programs that are not regulated as an insurance entity.
2. The ASOP was revised to include new disclosure requirements that the ASB believes are appropriate and are intended to enhance the quality of actuarial communications regarding CCRCs and At Home Programs.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

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The ASB would like to posthumously thank Matthew P. Chamblee for his contribution to the ASB Health Committee.

The ASB voted in September 2021 to adopt this standard.

ASOP No. 3—Doc. No. 202

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 3

**CONTINUING CARE RETIREMENT COMMUNITIES AND
AT HOME PROGRAMS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to **Continuing Care Retirement Communities (CCRCs)**, also known as Life Plan Communities (LPCs), or **At Home Programs** that are not regulated as insurance entities.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services, including giving advice, in connection with **CCRCs** (including nonprofit and for-profit entities) or **At Home Programs** that are not regulated as insurance entities. These actuarial services may be performed for owners, operators, financing entities, or current or prospective **contractual residents or members**, as well as for other professionals or regulatory bodies.

Examples of the services covered by this ASOP include the following:

- a. testing the financial condition for satisfactory actuarial balance;
- b. estimating actuarial values of assets and liabilities;
- c. evaluating the **fee structure** for existing **contractual residents or members**, or a **cohort of new contractual residents or members**;
- d. developing **population projections**, including **contractual resident or member movements**, **independent living unit turnover**, and **health center utilization**;
- e. projecting future cash flows and **cash and investment balances**;
- f. designing and pricing new **residency agreements or membership agreements**;
- g. estimating the future services obligation under GAAP;
- h. assisting in developing financial feasibility studies;
- i. performing mortality, **morbidity**, and **withdrawal** experience studies; and
- j. providing appropriate rates of mortality, **morbidity**, or life expectancies.

This standard does not apply to actuaries when performing actuarial services with respect to **At Home Programs** regulated as insurance entities. When performing actuarial services with respect to such organizations, the actuary should review ASOP No. 18, *Long-Term Care Insurance*, for applicability.

If the actuary determines that the guidance in this ASOP conflicts with a cross-practice ASOP (applies to all practice areas), this ASOP governs.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**— When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work performed on or after June 1, 2022.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Actuarial Balance Sheet**—A measure of the assets and liabilities, as of the **valuation date**, associated with current **contractual residents** or current **members**.
- 2.2 **Actuarial Present Value**—The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions with regard to future events, observations of market or other valuation data, or a combination of assumptions and observations.
- 2.3 **Additional Fee**—An amount that may be payable by a **contractual resident** or **member**, in accordance with a **residency agreement** or **membership agreement**, for services made available but not covered by the **advance fee** and the **periodic fees**. Examples of **additional fees** include fees for guest meals, additional meals, barber/beauty shop, use of a carport, and non-covered health care services.
- 2.4 **Advance Fee**—An amount payable by a **contractual resident** at the inception of a **residency agreement** or by a **member** at the inception of a **membership agreement**. The **advance fee** is usually specified in the **residency agreement** or **membership agreement** and is usually payable prior to occupancy of the residence or receipt of benefits.

- 2.5 **At Home Program**—An organization that provides social and health care services in return for some combination of an **advance fee**, **periodic fees**, and **additional fees**. **At Home Programs** differ from **CCRCs** in that they do not provide a direct **independent living unit** for **members**.
- 2.6 **Cash and Investment Balance**—The value of cash, cash equivalents, and marketable securities (historically referred to as “cash balance” by industry organizations). This excludes the value of the **physical property** assets.
- 2.7 **Cohort of New Contractual Residents or New Members**—A hypothetical group of new **contractual residents or members** assumed to enter a **CCRC** or **At Home Program** over a specified period of time and assumed to have certain demographic characteristics.
- 2.8 **Continuing Care Retirement Community (CCRC)**—An organization that provides contractual residential housing and stated housekeeping, social, and health care services in return for some combination of an **advance fee**, **periodic fees**, and **additional fees**. **CCRCs** are also known as Life Plan Communities (LPCs).
- 2.9 **Contractual Resident**—A person who has signed a **residency agreement**.
- 2.10 **Fee Structure**—A combination of fees that includes **advance fees** and **periodic fees**, and that may include **additional fees**.
- 2.11 **Health Care Guarantee**—A clause in a **residency agreement** or **membership agreement** guaranteeing access to health care and defining the type of health care services to be provided to the **contractual resident** or **member**. These health care services may be offered with or without adjustments to the **periodic fees**.
- 2.12 **Health Center**—A facility associated with a **CCRC** or **At Home Program** where health care is provided to **contractual residents or members** in accordance with the **residency agreement** or **membership agreement**. The facility typically includes some combination of assisted living, memory care, and nursing care units. **Non-contractual residents** may also live in the facility.
- 2.13 **Independent Living Unit**—Living quarters designed for **contractual residents** capable of living independently. A **contractual resident** could receive home health care in the **independent living unit**, but a **contractual resident** who needs full-time health care on either a temporary or permanent basis is normally transferred to the **health center**.
- 2.14 **Level(s) of Care**—Varying degrees of care based on a **contractual resident's** or **member's** health status. Typical **levels of care** include independent living, assisted living, nursing care, and memory care. The **levels of care** may be dictated by state licensure.
- 2.15 **Living Unit**—The various living quarters of a **CCRC**, including **independent living units** and **health center** units.

- 2.16 **Member**—A person who has signed a **membership agreement** with an **At Home Program**.
- 2.17 **Membership Agreement**—A contract between one or more **members** and an **At Home Program** that describes the services to be provided, the obligations of the parties, the **health care guarantee**, and any **refund guarantee**. The contract is usually of long duration and may be for the life of each **member**.
- 2.18 **Morbidity**—The incurrance of an illness or disability requiring the transfer to a different **level of care**. The **permanent transfer** rates and the **temporary transfer** rates together comprise the rate of **morbidity**.
- 2.19 **Non-Contractual Resident**—A person living in the **CCRC** without a **health care guarantee** and without a **refund guarantee**. **Non-contractual residents** normally pay for all health care services received on a fee for service basis. Examples of **non-contractual residents** are rental or lease residents, and direct admissions to the **health center**.
- 2.20 **Occupancy Rate**—The number of occupied units at each **level of care** by **contractual** and **non-contractual residents**, relative to available units.
- 2.21 **Periodic Fee**—Amounts payable periodically (usually monthly) by a **contractual resident** or **member**. The amounts are typically adjusted from time to time to reflect changes in operating costs.
- 2.22 **Permanent Transfer**—A move from one **level of care** to another **level of care** without expectation of returning to the former **level of care**.
- 2.23 **Physical Property**—Physical assets, such as land, building, furniture, fixtures, or equipment. These assets, excluding land, are assumed to depreciate over their respective lifetimes. These assets are also referred to as the fixed assets.
- 2.24 **Population Projection**—An estimate of the expected number of **contractual residents** or **members** at various future times.
- 2.25 **Refund Guarantee**—A clause in a **residency agreement** or **membership agreement** that provides for a refund of any portion of the **advance fee** upon termination of the agreement.
- 2.26 **Residency Agreement**—A contract between one or more residents and a **CCRC** that includes a **health care guarantee** or a **refund guarantee**, and describes the services to be provided and the obligations of the parties. The contract is usually of long duration and may be for the life of each **contractual resident**.
- 2.27 **Temporary Transfer**—A move from one **level of care** to another **level of care** with the expectation of returning to the former **level of care**.

- 2.28 **Trend**—Measure of rates of change, over time, that affects revenues, costs, or actuarial assumptions.
- 2.29 **Valuation Date**—The date as of which the assets and liabilities of the **CCRC** or **At Home Program** are estimated.
- 2.30 **Withdrawal**—The termination of a **residency agreement** or **membership agreement** by the **contractual resident** or **member** for reasons other than death.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—When providing actuarial services related to **CCRCs** or **At Home Programs**, the actuary should take into account the relevant financial items associated with the organizations, current **contractual residents** or **members**, new **contractual residents** or **members**, and **levels of care** provided, as well as relevant **residency agreement** or **membership agreement** provisions and applicable law. The actuary should use methods and assumptions that are, in the actuary’s professional judgment, appropriate considering the scope and purpose of the assignment.
- 3.2 **Determination of Satisfactory Actuarial Balance**—In determining whether the **CCRC** or **At Home Program** is in satisfactory actuarial balance as of the **valuation date**, the actuary should evaluate whether the **CCRC** or **At Home Program** meets all of the following three conditions:
- 3.2.1 **Condition 1: Adequate Resources for Current Contractual Residents or Members**—The resources available to current **contractual residents** or **members** include any existing net assets plus the **actuarial present value** of future revenues, such as **periodic fees**, **additional fees**, and third-party payments (for example, Medicare, Medicaid, and long-term care insurance).
- Condition 1 would be met if the resources are greater than or equal to any existing liabilities for the current **contractual residents** or **members** plus the **actuarial present value** of the expected costs associated with the contractual obligations to current **contractual residents** or **members**. The actuary should determine if this condition is satisfied using the **actuarial balance sheet** (see section 3.3).
- 3.2.2 **Condition 2: Adequate Fee Structure for a Cohort of New Contractual Residents or New Members**—For a **cohort of new contractual residents** or **new members**, the expected fees are the sum of the **advance fees** paid plus the **actuarial present value** of the new **contractual residents**’ or new **members**’ expected future revenues, such as **periodic fees**, **additional fees**, and third-party payments (for example, Medicare, Medicaid, and long-term care insurance).
- Condition 2 would be met if the expected fees are greater than or equal to the **actuarial present value** of the costs associated with the contractual obligations

determined at an appropriate occupancy or membership date for the cohort. The actuary should determine if this condition is satisfied using the cohort pricing analysis (see section 3.4).

- 3.2.3 **Condition 3: Positive Projected Cash and Investment Balances**—The projection of **cash and investment balances** over the projection period should include revenue and expenses from all known sources, including current **contractual residents** or **members**, new **contractual residents** or **members**, and any **non-contractual residents**.

The actuary should choose a projection period that extends to a point at which, in the actuary’s professional judgment, the use of a longer period would not materially affect the results and conclusions.

Condition 3 would be met if the **cash and investment balances** are positive in each projection year. The actuary should determine whether this condition is satisfied using the cash flow projection (see section 3.5).

In the event the **CCRC** or **At Home Program** fails to meet any of the three conditions as specified above, the actuary should consult with the organization to address possible corrective actions to achieve satisfactory actuarial balance.

For a proposed or start-up **CCRC** or **At Home Program**, the actuary should evaluate conditions 1 and 2 using a future **valuation date** and should begin evaluating condition 3 as of a future date. The actuary should select such future dates that are consistent with the end of the start-up period. For example, the actuary may evaluate these conditions using the earlier of a short-term period (such as three to five years) after opening or when the **CCRC** or **At Home Program** reaches the targeted number of **contractual residents** or **members**.

- 3.3 **Actuarial Balance Sheet**—The actuary should develop the **actuarial balance sheet** according to the following:

- 3.3.1 **Closed-Group Projection of Current Contractual Residents or Members**—The actuary should use a **population projection** that is performed solely with respect to current **contractual residents** or **members** on the **valuation date**. The actuary should project the surviving **contractual residents’** or **members’** movements through various **levels of care** until contract termination. This projection excludes new **contractual residents**, new **members**, and any **non-contractual residents**.

- 3.3.2 **Assets**—The actuary should estimate the **actuarial present value** of each of the following: the future **periodic fees** (described in section 3.6.1), the future **additional fees** and third-party payments (described in section 3.6.2), and the **physical property** for assets currently in service (described in section 3.6.3).

The actuary should reflect in the **actuarial balance sheet** other assets from the accounting balance sheet as appropriate, in the actuary's professional judgment. These assets generally include such items as **cash and investment balances**, current receivables, and other items not specifically reflected in the above guidance.

- 3.3.3 **Liabilities**—The actuary should estimate the **actuarial present value** of each of the following: the future use of **physical property** (described in section 3.6.4), the future operating expenses (described in section 3.6.5), the future refunds due to **refund guarantees** (described in section 3.6.6), and the long-term debt (described in section 3.6.7).

The actuary should reflect in the **actuarial balance sheet** other liabilities from the accounting balance sheet as appropriate, in the actuary's professional judgment. These liabilities generally include such items as current payables, prepaid **contractual resident or member** deposits, fees paid in advance, short-term debt obligations, and other items not specifically reflected in the above guidance.

- 3.4 **Cohort Pricing Analysis**—The actuary should develop the cohort pricing analysis based on the **actuarial present value** of revenues and expenses associated with a **cohort of new contractual residents or new members**.

The actuary should use a **population projection** that is performed solely with respect to a **cohort of new contractual residents or new members**. The actuary should project surviving **contractual resident or member** movements through various **levels of care** until contract termination. This **population projection** excludes any **non-contractual residents**.

The revenues include the **advance fees**, the **actuarial present value** of future **periodic fees** (described in section 3.6.1), and the **actuarial present value** of future **additional fees** and third-party payments (described in section 3.6.2).

The expenses include the **actuarial present value** of each of the following: the future use of **physical property** (described in section 3.6.4), the future operating expenses (described in section 3.6.5), and the future refunds due to **refund guarantees** (described in section 3.6.6).

The actuary may consider, subject to disclosure, the use of expense levels consistent with the targeted number of **contractual residents or members** when a material change in the population, such as growth resulting from new construction or expansion, is expected.

- 3.5 **Cash Flow Projections**—The actuary should perform cash flow projections using an open group **population projection** that includes existing **contractual residents or members** on the **valuation date** together with expected future **contractual residents or members** consistent with assumed **occupancy rates** and membership levels. For CCRCs, the actuary should include **non-contractual residents** in this **population projection** that use

unoccupied units or beds in various **levels of care** consistent with assumed **occupancy rates**.

The actuary should select assumptions in the cash flow projections that are consistent with those used in the development of the **actuarial balance sheet** and cohort pricing analysis (see sections 3.3 and 3.4).

The actuary should reflect revenues from all known sources (such as **advance fees**, **periodic fees**, **additional fees**, payments from **non-contractual residents**, third-party payments, and investment income). The actuary should reflect expenses from all known sources (such as operating expenses, capital expenditures, debt interest and principal payments, any cost of using an offsite health facility, and refunds due to **refund guarantees**).

In the cash flow projection, the actuary should develop the **cash and investment balances** at the beginning and end of each projection year.

3.6 **Actuarial Asset and Liability Values**—When developing the **actuarial balance sheet** or the cohort pricing analysis, the actuary should develop the following **actuarial present value** items.

3.6.1 **Future Periodic Fees**—The actuary should estimate the **actuarial present value** of future **periodic fees** by projecting the fees payable by the surviving **contractual residents or members** of the appropriate closed-group population in each **level of care** in each future year, and discounted to the **valuation date**. In the estimate of future fees, the actuary should reflect current rates adjusted for projected future fee increases.

3.6.2 **Future Additional Fees and Third-Party Payments**—The actuary should estimate the **actuarial present value** of future **additional fees** (such as guest meals and additional meals) and third-party payments. When projecting future payments, the actuary should project the additional revenue payable by, or on behalf of, the surviving **contractual residents or members** attributable to the appropriate closed-group population in each **level of care** in each future year. In the estimate of these future payments, the actuary should reflect current experience adjusted for projected future increases.

3.6.3 **Physical Property for Assets Currently in Service**—The actuary should estimate the **actuarial present value of physical property** for assets currently in service as the **actuarial present value** of the projected remaining annual capital expense charges associated with assets in service as of the **valuation date**.

The actuary should estimate the annual capital expense charge for the use of an asset for each year using its useful lifetime. The projected annual capital expense charge consists of the imputed interest charge for the use of the asset plus the change in asset value from one year to the next. In calculating the capital expense

charges, the actuary should use a rate consistent with the cost of capital at the time the asset was originally put into service or the cost of capital in the current economic environment.

- 3.6.4 **Future Use of Physical Property**—The actuary should estimate the **actuarial present value** of the future use of **physical property** by taking the projected annual capital expense charges for both the current and replacement fixed assets allocated to the surviving **contractual residents** of the appropriate closed-group population in each future year and discounting the result back to the **valuation date**. The actuary should consider developing the **actuarial present value** estimates for each **level of care**.

The actuary should use a methodology to estimate the annual capital expense charges that is consistent with the methodology used to estimate the annual capital expense charges of **physical property** for assets currently in service (see section 3.6.3).

- 3.6.5 **Future Operating Expenses**—The actuary should estimate the **actuarial present value** of future operating expenses by taking the operating expenses allocated to the **contractual residents** or **members** of the appropriate closed-group population in each future year and discounting the result back to the **valuation date**. The actuary should exclude from future operating expenses (a) future capital expenditures, which are discussed in section 3.6.4; and (b) the future long-term debt interest and principal payments, which are discussed in section 3.6.7.

When estimating future operating expenses, the actuary should reflect future cost **trends** and reflect underlying expense consumption patterns in the allocation. The actuary should allocate expenses across the various **levels of care** and within each **level of care** on an appropriate basis such as per person, per unit, or per square foot.

- 3.6.6 **Future Refunds Due to Refund Guarantees**—The actuary should estimate the **actuarial present value** of future refunds due to **refund guarantees** by estimating the amount of refund due to each terminating **contractual resident** or **member** of the appropriate closed-group population in each future year and discounting the amounts back to the **valuation date**. The refund calculation is for the contractual amount of the **advance fee** refund. The actuary should calculate the estimate of the **advance fee** refund based on the contractual liability for each future year on the terms of the **residency agreement** or **membership agreement** assumed to be applicable to that **contractual resident** or **member** and the organization's actual practice, if any, with regard to payment of refunds.

- 3.6.7 **Long-Term Debt**—The actuary should estimate the present value of long-term debt as the discounted value of the projected remaining principal and interest payments as of the **valuation date**. The present value of long-term debt may be different than the amount on the accounting balance sheet depending on the relationship between the discount rate and the actual or expected interest rate on the debt.

3.7 **Selection of Actuarial Assumptions**—The actuary should take into account the following when selecting assumptions.

3.7.1 **Actuarial Assumptions**—In selecting actuarial assumptions for mortality, **morbidity, withdrawal, and occupancy rates**, the actuary should reflect each of the following as appropriate:

- a. age and gender;
- b. health characteristics;
- c. **permanent transfer** and **temporary transfer** patterns;
- d. **level of care** status and expected differences in experience between **contractual residents** or **members** in different **levels of care**;
- e. time elapsed since the last change in the **level of care**;
- f. single or joint contracts;
- g. demographic profile and number of new **contractual residents** or **members**;
- h. time elapsed since the **contractual resident** or **member** entered the CCRC or **At Home Program**;
- i. actual experience of the CCRC or **At Home Program**, and the credibility of the experience;
- j. contractual guarantees, such as **health care guarantees** and **refund guarantees**; and
- k. operational policies and practices of the organization, such as transfer policies.

The actuary should select **trend** assumptions to project mortality (sometimes referred to as “mortality improvement,” which can be positive or negative), **morbidity, withdrawal, and occupancy rates** that are reasonable, in the actuary’s professional judgment. In selecting **trend** assumptions, the actuary should consider and review appropriate data. The data may include **trend** experience studies, appropriate industry studies, and management **occupancy rate** projections.

3.7.2 **Trend Assumptions for Fees and Expenses**—The actuary should set **trend** assumptions for **periodic fees, advance fees, additional fees**, and other revenue items. The actuary should also set **trend** assumptions for operating expenses,

capital expenditures, and other expense items. The actuary may use different **trend** assumptions, as appropriate, for various categories of revenues and expenses. In setting **trend** assumptions for **periodic fees**, the actuary should also take into account practical, competitive, and contractual considerations.

The actuary should select assumptions for future **trends** in **periodic fees** that are consistent with the **trend** assumptions that are used in projecting future expenses. If the actuary uses different **trend** assumptions for **periodic fees** and operating expenses, the actuary should disclose this difference.

- 3.7.3 **Investment Rate and Discount Rate Assumptions**—The actuary should select investment rate and discount rate assumptions that are individually reasonable, mutually consistent, and reflective of the long-term nature of the **residency agreement** or **membership agreement** as follows:
- a. short- and long-term market expectations, and the future investment strategy of the organization to estimate investment income for the cash flow projection; and
 - b. a discount rate to estimate **actuarial present values** that, in the actuary’s professional judgment, is reasonable and appropriate, and is consistent with the investment rate.
- 3.7.4 **Revenue and Expense Allocation Assumptions**—The actuary should assume an allocation of general revenues and expenses to the various **levels of care**, and to current and new **contractual residents** or **members**. The actuary should determine whether the sum of all allocated expenses reconciles to the total projected expenses of the **CCRC** or **At Home Program**.
- 3.7.5 **Going-Concern Assumption**—The **actuarial balance sheet**, the cohort pricing analysis, and the cash flow projection rely on assumptions predicated on the ongoing financial viability and continuation of the **CCRC** or **At Home Program**. This implies that the organization will be able to maintain appropriate **occupancy rates** or membership levels by attracting new **contractual residents** or **members** to replace existing **contractual residents** or **members**. The actuary should assess the ability of the organization to attract new **contractual residents** or **members** or any other known, significant circumstances that, in the actuary’s professional judgment, may affect the organization’s ability to remain a going concern.
- 3.7.6 **Reasonableness of Assumptions**—The actuary should review the assumptions for reasonableness. The assumptions should be reasonable, in the actuary’s professional judgment, in the aggregate and for each assumption individually. The actuary should identify material changes in assumptions, and methods relating to the use of those assumptions, compared to the most recent prior analysis if applicable.

In reviewing the assumptions for reasonableness, the actuary should take into account the following:

- a. the intended purpose of the measurement;
 - b. the frequency with which the projections are expected to be updated;
 - c. the length of the projection period;
 - d. the sensitivity of the projections to the effect of variations in key actuarial assumptions;
 - e. the potential variability of the assumption;
 - f. consistency among related assumptions;
 - g. the size of the **CCRC's contractual resident** population or **At Home Program** membership;
 - h. the ability to increase fees or decrease expenses in future periods;
 - i. the level of capital available to provide for adverse fluctuation;
 - j. any significant margins for uncertainty that have been included in the actuarial assumptions; and
 - k. the expectation of no material bias (i.e., it is not materially optimistic or pessimistic) relative to the purpose of the measurement, excluding the effect of a margin.
- 3.8 **Benevolence Funds and Financial Assistance Subsidies**—The actuary should determine the benevolence funds or financial assistance subsidies available as well as the potential future liabilities for **contractual residents** or **members** who do not pay the contractual fees. For example, some organizations may set aside assets or funds from charitable contributions to assist **contractual residents** or **members**, while other organizations may include the costs of any assistance in the basic **fee structure**.
- 3.9 **For-Profit CCRCs or At Home Programs**—When performing actuarial services with respect to for-profit organizations, the actuary should determine the nature and financial implications of the ownership arrangement, including owner's equity, past and possible future equity distributions, potential income tax liability, and historical and future capital expenditures funded by the owner.
- 3.10 **Equity or Cooperative CCRCs or At Home Programs**—When performing actuarial services with respect to equity or cooperative **CCRCs** or **At Home Programs**, the actuary should determine the nature and financial implications of any **contractual resident** or **member**

ownership arrangement, including **advance fee** payments and refunds due to **refund guarantees**, and the value of assets invested in the **physical property** and the replacement costs of these fixed assets.

- 3.11 **Additional Considerations Affecting CCRC or At Home Program Finances**—The actuary should determine the scope of the organization’s commitments to current and prospective **contractual residents or members** and the nature of its **fee structure**. The actuary may obtain this information from the applicable **residency agreements** or **membership agreements** and any other reasonable source of information about the organization. When interpreting these documents, the actuary should determine the following:
- a. the admission and underwriting criteria and how they are applied;
 - b. the terms of the **residency agreement** or **membership agreement** and any limitations on the period for which commitments are made;
 - c. any known, significant limitations on the organization’s ability to change future **periodic fees**;
 - d. any **refund guarantees**;
 - e. any limitation on the services provided and any collectability risk for services limited under the contract or requiring additional payment;
 - f. any contract provisions for prepaid health care or for additional charges if a **contractual resident** or **member** receives health care;
 - g. any affiliation with another entity and the extent to which any such entity would assume responsibility for the organization’s obligations; and
 - h. any other matter that, in the actuary’s professional judgment, is expected to have a material effect on the organization’s current or future financial statements.
- 3.12 **External Restrictions**—The actuary should take into account restrictions on the **CCRC** or **At Home Program** from external sources, such as applicable law, regulation, or other binding authority. Examples include a state’s Medicaid reimbursement policy, regulations restricting the use of **health center** beds by **non-contractual residents**, and any relevant lender-imposed restrictions.
- 3.13 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.
- 3.14 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. When preparing documentation, the actuary should prepare documentation in a

form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 23 and 41. In addition, the actuary should disclose the following in such actuarial reports, if applicable:

- a. historical and current financial data used to produce the **actuarial balance sheet**, cohort pricing analysis, and cash flow projections, in accordance with sections 3.3, 3.4, and 3.5;
- b. summary of historical **contractual resident** or **member** data and population statistics for **contractual residents** or **members** as of the **valuation date**, in accordance with sections 3.3, 3.4, and 3.5;
- c. assumptions and methodology used in performing the **population projections**, in accordance with sections 3.3, 3.4, and 3.5;
- d. assumed expense levels consistent with the targeted number of **contractual residents** or **members** when a material change in the population is expected, in accordance with section 3.4;
- e. assumptions and methodology used to estimate each **actuarial present value**, in accordance with section 3.6;
- f. assumptions and methodology used to value and depreciate the **physical property**, in accordance with sections 3.6.3 and 3.6.4;
- g. mortality, **morbidity**, **withdrawal**, and **occupancy rate** assumptions (including **trend** assumptions, if any), and methodology used in selecting such assumptions, in accordance with sections 3.7.1;
- h. **trend** rates for revenues and expenses, and the relationship between the two, in accordance with section 3.7.2;
- i. investment rate and discount rate, in accordance with section 3.7.3;
- j. assumptions and methodology used to allocate general revenue and expenses, in accordance with section 3.7.4;

- k. any known significant circumstances that may affect the organization's ability to remain a going concern, in accordance with section 3.7.5;
- l. assumptions and methodology used for any significant margin for uncertainty, or a similar adjustment or provision, included in the actuarial valuation, including any significant assumptions affecting the valuation regarding surplus available to provide for adverse fluctuations, in accordance with section 3.7.6;
- m. any material changes in assumptions or methods from the most recent prior analysis, in accordance with section 3.7.6;
- n. the results of any sensitivity tests performed, in accordance with section 3.7.6; and
- o. any assistance assumed to be derived from dedicated benevolence funds or financial assistance subsidies, in accordance with section 3.8.

4.2 Assignments Involving an Opinion on Satisfactory Actuarial Balance—The actuarial report should disclose the **actuarial balance sheet**, the cohort pricing analysis, and the **cash and investment balances** at the beginning and end of each projection year, which were prepared to test the three conditions, in accordance with sections 3.3, 3.4, and 3.5 and state whether or not each condition is met.

If one or more of the three conditions is not met, the actuary should disclose the implications of the deficiency and, if known, a description of management's plans to address the deficiency for each unmet condition.

If the actuary is unable to form the needed opinion regarding whether the organization is in satisfactory actuarial balance, or if the opinion is adverse (due to failing one or more of the conditions) or otherwise qualified, then the actuary should disclose why the actuary is unable to form an unqualified favorable opinion.

4.3 Additional Disclosures in an Actuarial Report—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:

- a. if any material assumption or method was prescribed by applicable law;
- b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Certain contractual obligations of a CCRC or At Home Programs are contingent upon the occurrence, timing, and duration of certain future events. The CCRC contractual resident or At Home Program member typically pays for such future promised services through a combination of advance and periodic fees, typically before the services are provided. Actuarial methods are used to establish the fee structure and to measure the organization's liabilities for the provision of future promised services.

High occupancy, sound pricing, care management, and effective financial management are some of the keys to the successful operation of a CCRC. The ability of a CCRC to attract new contractual residents to fill vacancies will depend on keeping the CCRC competitive with respect to its physical property, its fee schedule, and the general attractiveness of its whole environment. Membership levels, sound pricing, care management, and effective financial management are some of the keys to the successful operation of an At Home Program.

Current Practices

Current actuarial practices for CCRCs are generally now well established. Prior to the release of the first edition of this ASOP and the release of subsequent educational material by various entities, actuaries used differing analytical approaches. These approaches included differing methods to determine closed and open-group contractual resident projections, projected refunds due to refund guarantees, physical property valuations, long-term debt, and other items. While historically differences did exist, these differences have now mostly been eliminated and standardized practices have evolved.

Illustrative Capital Expense Charge Development and Physical Property Valuation

The physical property, or fixed assets, of a CCRC are a significant asset of the CCRC, and also a significant cost to the contractual residents of the CCRC. In order to provide for equity among generations of contractual residents, it is necessary to allocate an appropriate part of the cost of the use of physical property to current contractual residents as of the valuation date and to the cohort of new contractual residents.

The method described in this appendix for developing and assigning the annual capital expense charge for asset use, determining the asset's actuarial value, and determining the liability for asset

use is one illustrative method designed to provide for equity among generations of contractual residents. (Illustrative formulas for expensing and valuing physical property are presented at the end of this appendix.)

Physical property assets may be valued and depreciated using level, decreasing, or increasing depreciation methodologies based on actuarial principles, the nature of the underlying assets, and other factors.

Capital Expense (Imputed Interest plus Depreciation) Charges—The annual capital expense charge for physical property consists of the imputed interest for the use of the asset, or opportunity cost of using cash resources for purchasing a fixed asset (because it is not an interest-earning investment), plus the change in asset value from one year to the next.

- a. Each item of physical property is assigned an assumed useful lifetime and an appropriate rate of inflation. While GAAP expected lifetimes might be available, alternative lifetimes may be available from other sources such as engineering studies performed by the client. In the case of land, the expected useful lifetime may be perpetual.
- b. The annual capital expense charge for the use of an asset is developed for each year using its useful lifetime and is calculated as one of a series of annual amounts. The present value of this series, discounted to the time of acquisition, equals the cost of the asset. This series of annual amounts may be decreasing, level, or increasing.
- c. In similar fashion, capital expense charges are developed for physical property assumed to be purchased in future years. It is assumed that each asset will be replaced at the end of its useful lifetime with a new asset. The cost of the new asset is assumed to equal the original cost indexed for inflation. The asset is continually replaced at the end of successive useful lifetimes.

An approximation of these replacement costs that better reflects the expected magnitude and timing of future capital expenditures may also be used. These approximations reflect a sufficient level of future capital expenditures necessary to maintain the physical property for future use.

Capital expense charges are developed for the following items:

- a. Actuarial Value of Physical Property for Assets Currently in Service—Reflected as an asset on the actuarial balance sheet;
- b. Actuarial Present Value of Future Use of Physical Property Consumed by Current Contractual residents throughout Their Respective Lifetimes—Reflected as a liability on the actuarial balance sheet; and
- c. Actuarial Present Value for Future Use of Physical Property Consumed by a Hypothetical Group of Prospective Contractual Residents—Reflected as a liability on the cohort pricing analysis.

Value of Physical Property for Assets Currently in Service—The actuarial value of each asset is the discounted value (without survivorship) of the remaining annual capital expense charges as of the valuation date. The sum of these values for all such assets in service as of the valuation date is reflected as an asset on the actuarial balance sheet.

Value of Future Use of Physical Property for Existing Contractual Residents—The actuarial present value of the future use of physical property for existing contractual residents is the discounted value (with survivorship) of the annual capital expense charges for the physical property, *and* its replacements, allocated to existing contractual residents as of the valuation date.

- a. The part of each future year's capital expense charge that relates to the existing contractual residents as of the valuation date is determined by estimating the ratio of the existing contractual resident survivorship group use to total CCRC use. The ratio may be in proportion to population, number of CCRC occupied beds or units, square footage, or some other appropriate measure. For years during fill-up or material change in population, it may be appropriate to substitute a target or ultimate level of use for the actual estimated level of total use.
- b. The current actuarial liability for the promised future use of a physical asset (and its replacements) with respect to the existing contractual resident closed group is the sum (for all years) of the part of such capital expense charge in each future year related to the existing closed group, as determined in (a), discounted to the valuation date.

Value of Future Use of Physical Property for the New Entrant Cohort—The actuarial present value of the future use of physical property for the new entrant cohort is the discounted value (with survivorship) of the annual capital expense charges for the physical property, and its replacements, allocated to the new entrant cohort closed group.

- a. The part of each future year's capital expense charge that relates to the new entrant cohort is determined by estimating the ratio of the new entrant cohort survivorship group use to total CCRC use.
- b. The current actuarial liability for the promised future use of a physical asset (and its replacements) with respect to the new entrant cohort is the sum (for all years) of the part of such capital expense charge in each future year related to the new entrant cohort closed group, as determined in (a), discounted to the valuation date.

Illustrative Formulas for Expensing and Valuing Physical Property

Note: These formulas illustrate allocations on a per contractual resident basis. Other allocation bases such as units, beds, square footage, etc. may be more appropriate for certain assets.

A. Relationships of Asset Cost, Asset Value, and Open-Group Annual Expense

A = Actual asset

e = Expected years of the asset's useful lifetime.

E_n = Annual expense in year n for use of the asset. For simplicity in these illustrations, we assume it is payable at the end of the year.

j = Assumed annual rate of increase in E . Note that j could be zero. Setting $j = k$ makes it possible to anticipate a smooth progression in annual expense at the time the asset is replaced when its useful lifetime ends. (It is not necessary that E_n 's form a geometric series. However, in this example the E_n 's do form such a series.)

k = Assumed annual rate of increase in replacement cost of A .

i = Assumed annual discount, or cost of capital, rate.

v = $1/(1 + i)$.

A_o = Acquisition cost of the asset.

$$A_o = v * E_1 + v^2 * E_2 + \dots + v^e * E_e.$$

From this we obtain

$$E_1 = \frac{A_o * (i - j)}{1 - [v * (1 + j)]^e}, \quad \text{provided } i \neq j$$

V_n = Value of the current asset at duration n , where $n < e$.

$$V_n = v * E_{n+1} + v^2 * E_{n+2} + \dots + v^{e-n} * E_e.$$

From this we obtain

$$E_{n+1} = i * V_n + (V_n - V_{n+1}).$$

This shows that the annual expense for a physical asset consists of the interest that is forgone (because it is not an interest-earning investment), plus the change in asset value from one year to the next. In the case of land, the annual expense consists of only the interest that is forgone, since there is no assumed change in asset value (lifetime is perpetual).

B. Relationship of Closed-Group Liability with Open-Group Expense

P_n = Projected total population at duration n , determined on an open-group basis.
Depending on the circumstances, a reasonable approximation for P may be a constant number equaling the current population.

C_n = Projected surviving population at duration n from a specified closed group. The closed group may be the closed group of current contractual residents or the closed group for a cohort of new contractual residents.

If a part of a given CCRC is used for persons not under contract, only the fraction devoted to those under contract should be considered. One way of accomplishing this is to include those not under contract in P_n but not in C_n .

$R_{n+1} = \frac{C_n + C_{n+1}}{P_n + P_{n+1}}$, representing the ratio of the projected closed group population to the projected total population.

L_n = Liability at duration n for the future use of the asset and its replacements by a specific closed group.

$$\begin{aligned} L_n = & v * R_{n+1} * E_{n+1} + v^2 * R_{n+2} * E_{n+2} + \dots + v^{e-n} * R_e * E_e \\ & + v^{e-n+1} * R_{e+1} * E_{e+1} + v^{e-n+2} * R_{e+2} * E_{e+2} + \dots + v^{2e-n} * R_{2e} * E_{2e} \\ & + \dots \dots \dots + \text{until } R = 0. \end{aligned}$$

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the proposed revision of ASOP No. 3, *Continuing Care Retirement Communities and At Home Programs*, was issued in November 2020 with a comment deadline of February 1, 2021. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 3 Task Force carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the ASOP No. 3 Task Force and the ASB Health Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 3 Task Force, the ASB Health Committee, and the ASB. Also, the section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final ASOP.

GENERAL COMMENT	
Comment	One commentator felt itemized paragraph 1 on page vi, announcing the applicability of the ASOP to “At Home Programs that are not regulated as an insurance entity” raises numerous questions among them including: 1) why aren’t [At Home Programs] regulated as long term care insurance? and 2) Is it wise for the Academy to participate in encouraging long term care insurance programs by unlicensed entities?
Response	The reviewers believe ASOP No. 3 is intended to provide guidance to actuaries within the context of the existing regulatory environment.
Comment	One commentator felt that Continuing Care Retirement Communities (CCRCs) residents should have been represented on the ASOP No. 3 task force. The commentator also felt actuarial studies should be prepared for an audience that includes state regulators and residents. Lastly, the commentator also felt that actuarial studies should meet the needs of residents.
Response	The reviewers note the purpose of ASOPs is to provide guidance to actuaries practicing in this area and not to advocate for the interest of a particular stakeholder. The ASOP No. 3 task force is composed of actuaries with experience in the field. Any interested party, including non-actuaries, has an opportunity to offer comments through the exposure process prior to finalization of a standard.

ASOP No. 3—Doc. No. 202

Comment	One commentator felt the drafters missed the strategic opportunity to educate stakeholders on the difference between GAAP requirements and ASOPs.
Response	The reviewers disagree and believe the guidance regarding CCRCs is appropriate. The reviewers note the education of stakeholders is beyond the scope of this ASOP. The reviewers also note that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , provides guidance for situations where regulatory guidance conflicts with ASOPs. Therefore, the reviewers made no change in response to this comment.
Comment	One commentator felt the exposure draft fell short of providing additional definitions and guidance for the differences between At Home Programs and Continuing Care Retirement Communities.
Response	The reviewers believe CCRCs and At Home Programs are currently regulated in a similar manner state-by-state and, therefore, believe both are appropriately addressed in the revision of ASOP No. 3. Therefore, the reviewers made no change in response to this comment.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator felt that the limitation to “At Home Programs that are not regulated as insurance entities” is repeated in sections 1.1 and 1.2, and felt one would infer that [At Home Programs] offered by licensed insurers are subject to different standards though it’s hard to understand why the actuarial characteristics would be differentiated.
Response	The reviewers believe that this language is necessary to distinguish At Home Programs from long-term care insurance, which would be covered under ASOP No. 18, <i>Long-Term Care Insurance</i> , and made no change.
Section 1.2, Scope	
Comment	One commentator stated examples of services covered in the existing ASOP were removed but should have been retained.
Response	The reviewers agree and modified the language.
SECTION 2. DEFINITIONS	
Section 2.4, Advance Fee	
Comment	One commentator felt the definition in section 2.4 departs from the terms that are commonly used for single-premium-life-annuity-type prepayments of fees that would otherwise be paid on a recurrent basis over the insured’s (“resident” or “member” in the terminology of the ASOP) lifetime.
Response	The reviewers disagree and made no change in response to this comment.
Section 2.11, Health Center (now section 2.12)	
Comment	One commentator felt that the definition of “non-resident” (a term used in section 2.11) was confusing. Furthermore, the commentator felt clarity was needed regarding the difference between “residents” and “non-residents.”
Response	The reviewers agree and modified the terms “resident” to “contractual resident” and “non-resident” to “non-contractual resident.”
Section 2.24, Residency Agreement (now section 2.26)	
Comment	One commentator felt the sentence in section 2.24 reading, “The contract is usually of long duration and may be for the life of each resident,” is at odds with the AICPA Guidance that CCRC contracts are month-to-month because the resident may cease paying.
Response	The reviewers disagree and do not believe AICPA Guidance is relevant to this definition, and made no change in response to this comment.

ASOP No. 3—Doc. No. 202

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator felt specific guidance should be included in section 3 to assist actuaries in understanding the interaction between ASOP No. 3 and ASOP No. 56, <i>Modeling</i> .
Response	The reviewers note that the <i>Code of Professional Conduct</i> (Code) directs the actuary to consider all applicable ASOPs.
Section 3.2, Determination of Satisfactory Actuarial Balance	
Comment	One commentator felt the second to the last paragraph in section 3.2 that reads, “In the event the CCRC or At Home Program fails to meet any of three conditions as specified above, the actuary should consult with the organization to address possible corrective actions to achieve satisfactory actuarial balance,” raises the question of what the responsibility of the actuary is if the “organization” refuses to follow the advice.
Response	The reviewers believe this question is outside the scope of ASOP No. 3. Therefore, the reviewers made no change.
Section 3.3.2, Assets	
Comment	One commentator stated that additional disclosures are needed in section 3.3.2 regarding actuarial present value.
Response	The reviewers disagree and believe this topic is adequately addressed in section 3.6 and 4.1(e). Therefore, the reviewers made no change.
Section 3.4, Cohort Pricing Analysis	
Comment	One commentator suggested that the ASOP should provide an example of the methodology regarding temporary transfers among levels of care.
Response	The reviewers noted that the concept of temporary transfers is discussed in sections 2.27 and 3.7.1. The reviewers also note ASOPs are principles based and are not educational in nature, and made no change in response to this comment.
Section 3.5, Cash Flow Projections	
Comment	Two commentators suggested the cross reference to ASOP No. 7, <i>Analysis of Life, Health, or Property/Casualty Insurer Cash Flows</i> , is not appropriate.
Response	The reviewers agree and removed the cross reference.
Section 3.6.4, Future Use of Physical Property	
Comment	One commentator noted that in developing the present value of physical property and operating expenses both involve allocation of expenses to level of care.
Response	The committee agreed and modified section 3.6.4 to reflect the allocation of physical property expenses to level of care.
Section 3.6.6, Future Refunds Due to Refund Guarantees	
Comment	One commentator suggested changing “refund guarantee” terminology due to the uncertain nature of the contractual provision.
Response	The reviewers disagree and made no change in response to this comment.

ASOP No. 3—Doc. No. 202

Section 3.7, Selection of Actuarial Assumptions	
Comment	One commentator felt there should be a requirement that the combined effect of the assumptions is expected to have no significant bias except for margins for uncertainty.
Response	The reviewers agree and modified the language in section 3.7.6.
Section 3.7.1, Mortality, Morbidity, and Withdrawal Assumptions (now Actuarial Assumptions)	
Comment	One commentator suggested that documentation should be provided regarding the development of reasonable assumptions as discussed in section 3.7.1 and 3.7.6.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator felt that it should be explicitly stated that the actuary should consider future mortality improvement.
Response	The reviewers agree and modified the language in response to this comment.
Section 3.7.2, Trend Assumptions for Fees and Expenses	
Comment	One commentator expressed the need to document and communicate the development of revenue and expense assumptions, as identified in section 3.7.2.
Response	The reviewers note that the standard addresses this issue in sections 3.7.2 and 4.1(h), and made no change.
Section 3.7.5, Going-Concern Assumption	
Comment	One commentator suggested the ASOP require an actuary to perform a capital adequacy analysis and develop actuarial reserves.
Response	The reviewers disagree and made no change.
Section 3.7.6, Reasonableness of Assumptions	
Comment	One commentator suggested that section 3.7.6 should indicate that there should be consistency among the assumptions.
Response	The reviewers agree and modified the language in response to this comment.
Section 3.8, Benevolence Funds and Financial Assistance Subsidies	
Comment	One commentator suggested addressing the situation where the benevolence funds are being used for something other than residential financial assistance.
Response	The reviewers believe that section 3.8 appropriately addresses this situation and note that it states “the actuary should determine the benevolence funds or financial assistance subsidies available as well as the potential future liabilities for contractual residents or members who do not pay the contractual fees.” Therefore, the reviewers made no change in response to this comment.
Section 3.10, Equity or Cooperative CCRCs or At Home Programs	
Comment	One commentator believes the ownership structure of the organization is not material to the actuarial valuation.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.11, Additional Considerations Affecting CCRC or At Home Program Finances	
Comment	One commentator suggested adding more objective guidance to the actuary when analyzing residency contracts and membership agreements.
Response	The reviewers disagree and made no change in response to this comment. The reviewers note that section 3.11 provides an objective list of contractual items for the actuary to consider.
Section 3.14, Documentation	
Comment	One commentator suggested more specific guidance regarding documentation of assumptions and methodology, as well as retention of documentation.
Response	The reviewers disagree and note the language is consistent with standard language found in current ASOPs. Therefore, the reviewers made no change.

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator suggested more specific guidance regarding disclosure of demographic assumptions.
Response	The reviewers agree and modified section 4.1(g) to reflect this comment.
Comment	One commentator suggested that there should be a requirement to show sufficient detail to permit another qualified actuary to assess the level and pattern of each assumption.
Response	The reviewers note that ASOP No. 41, <i>Actuarial Communications</i> , contains these requirements and applies to all actuarial reports issued. Therefore, the reviewers made no change in response to this comment.
Section 4.2, Assignments Involving an Opinion on Satisfactory Actuarial Balance	
Comment	One commentator suggested that the actuary may not know management's plan to address deficiencies for each unmet condition. Therefore, the actuary would be unable to disclose such information.
Response	The reviewers agree and modified section 4.2.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 4**

Revised Edition

**Measuring Pension Obligations and
Determining Pension Plan Costs or Contributions**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2021**

Doc. No. 205

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December 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Measuring Pension Obligations and Determining Pension Plan Costs or Contributions

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 4

This document contains a revision of ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*.

History of the Standard

The ASB provides guidance for measuring pension and retiree group benefit obligations through the series of ASOPs listed below.

1. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*;
2. ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*;
3. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
4. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;
5. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*; and
6. ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

The last revision of ASOP No. 4 was issued in December 2013.

In response to specific requests for changes in the ASOPs and other activity related to public pension plans, in July 2014 the ASB issued a Request for Comments on the topic of ASOPs and Public Pension Plan Funding and Accounting. Over 50 comment letters were received covering a wide variety of potential ASB actions. In December 2014, the ASB formed the Pension Task Force and charged it with reviewing these comments and other relevant reports and input to develop recommendations for ASB next steps. In July 2015, the ASB held a public hearing on actuarial standards of practice applicable to actuarial work regarding public plans. The Pension Task Force provided its report to the ASB in February 2016. The report included suggestions for changes to the ASOPs that would apply to all areas of pension practice. In June 2016, the ASB

directed its Pension Committee to draft appropriate modifications to the actuarial standards of practice, in accordance with ASB procedures, to implement the suggestions of the Pension Task Force.

One of the suggestions made by the Pension Task Force was the calculation and disclosure of a solvency value for all valuations of pension plans done for funding purposes. In response to this suggestion, calculation and disclosure of an investment risk defeasement measure was added in the first exposure draft, and a low-default-risk obligation measure was added in the second and third exposure drafts as well as in this final version. The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.

First Exposure Draft

The first exposure draft was approved in March 2018 with a comment deadline of July 31, 2018. Sixty-seven comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was approved in December 2019 with a comment deadline of July 31, 2020. Nineteen comment letters were received and considered in making changes that were reflected in the third exposure draft.

Third Exposure Draft

The third exposure draft was approved in June 2021 with a comment deadline of October 15, 2021. Seven comment letters were received and considered in making changes that are reflected in the final ASOP.

Notable Changes from the Third Exposure Draft

Notable changes made to the third exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Section 3.2, General Procedures, added language directing the actuary to refer to ASOP No. 56, *Modeling*, for guidance on models when measuring pension obligations, determining periodic costs, or determining actuarially determined contributions. In addition, the list of ASOPs in section 4.1 now includes ASOP No. 56.
2. Section 3.11, Low-Default-Risk Obligation Measure, was clarified to state that, for purposes of the obligation measure, the actuary should consider reflecting the impact, if

any, of investing plan assets in low-default-risk fixed income securities on the pattern of benefits expected to be paid in the future, such as in a variable annuity plan.

Notable Changes from the Existing ASOP

Notable changes from the version of ASOP No. 4 adopted December 2013 include the following:

1. All references to “plan obligations” were changed to “pension obligations” for consistency.
2. All references to “actuarial assumptions” were changed to “assumptions” for consistency.
3. Section 1.2, Scope, was expanded to clarify the application of the standard when the actuary selects an output smoothing method and when an assumption or method is not selected by the actuary.
4. Section 2.8, Definition of Contribution Allocation Procedure, was clarified to state a contribution allocation procedure is one that determines one or more actuarially determined contributions for a plan.
5. Section 2.12, Funding Valuation, was added in conjunction with added guidance in section 3.
6. Section 2.13, Gain and Loss Analysis, was added in conjunction with added guidance in section 3.22.
7. Section 2.18, Output Smoothing Method, was clarified to state that for the purposes of this standard, an asset valuation method is not an output smoothing method.
8. Section 3.2, General Procedures, was revised to include specific references to sections 3.11, Low-Default-Risk Obligation Measure; 3.14, Amortization Methods; 3.16, Output Smoothing Method; 3.19, Implications of Contribution Allocation Procedure or Funding Policy; 3.20, Contribution Lag; 3.21, Reasonable Actuarially Determined Contribution; 3.22, Gain and Loss Analysis; 3.24, Assessment of Assumptions and Methods Not Selected by the Actuary; 3.25, Approximations and Estimates; and 3.26, Documentation. In addition, subsections of section 3 were reordered and renumbered.
9. The guidance in section 3.3.2, Uncertainty or Risk, was revised to refer only to the relevant ASOPs.
10. The title of section 3.8 was changed from “Actuarial Assumptions” to “Assumptions.” This section was expanded to provide additional guidance regarding selection of assumptions. In addition, exceptions to significant bias now include when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51. Section 3.8 also was revised for clarity.

11. Section 3.11, Low-Default-Risk Obligation Measure, was added to provide guidance regarding the calculation of this measure when the actuary is performing a funding valuation.
12. Section 3.14, Amortization Methods, was added to provide guidance on the selection of amortization methods.
13. Section 3.16, Output Smoothing Methods, was added to provide guidance on the selection of output smoothing methods.
14. Section 3.17 (previously 3.14), Allocation Procedure, was expanded to provide additional guidance regarding the selection of a cost allocation procedure or contribution allocation procedure.
15. Section 3.14.2 (now 3.19), Implications of Contribution Allocation Procedure or Funding Policy, was modified to eliminate exceptions to the requirement that the actuary should assess such implications whenever the actuary is performing a funding valuation.
16. Section 3.20, Contribution Lag, was added to provide guidance on calculating an actuarially determined contribution, and the passage of time between the measurement date and the expected timing of actual contributions.
17. Section 3.21, Reasonable Actuarially Determined Contribution, was added to provide further guidance on performing a funding valuation that does not include a prescribed assumption or method set by law.
18. Section 3.22, Gain and Loss Analysis, was added to provide guidance regarding the performance of a gain and loss analysis when performing a funding valuation.
19. Section 3.16 (now section 3.23), Volatility, was modified to direct an actuary analyzing potential economic and demographic volatility to refer to ASOP No. 51 for additional guidance.
20. Section 3.26, Documentation, was added to provide guidance on documenting work within the scope of this ASOP.
21. Section 4.1, Communication Requirements, was renamed “Required Disclosures in an Actuarial Report,” was expanded to provide additional guidance concerning disclosures, and was reordered to follow the order of the guidance in section 3.

The ASB voted in December 2021 to adopt this standard.

ASOP No. 4—Doc. No. 205

Pension Committee of the ASB

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 4

**MEASURING PENSION OBLIGATIONS
AND DETERMINING PENSION PLAN COSTS OR CONTRIBUTIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to measuring obligations under a defined benefit pension plan (also referred to as “plan” or “pension plan” throughout this standard) and determining **periodic costs** or **actuarially determined contributions** for such plans. Other actuarial standards of practice address assumptions, asset valuation methods, and assessment of risk. This standard addresses broader measurement issues, including **cost allocation procedures** and **contribution allocation procedures**. This standard provides guidance for coordinating and integrating all of the elements of an **actuarial valuation** of a pension plan.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to the following tasks in connection with a pension plan:
 - a. measurement of pension obligations, such as determinations of **funded status**, assessments of solvency upon plan termination, market measurements, and measurements for use in pricing benefit provisions;
 - b. assignment of the value of pension obligations to time periods, such as **actuarially determined contributions**, **periodic costs**, and **actuarially determined contribution** or **periodic cost** estimates for potential plan changes;
 - c. development of a **cost allocation procedure** used to determine **periodic costs** for a plan;
 - d. development of a **contribution allocation procedure** used to determine **actuarially determined contributions** for a plan;
 - e. determination of the types and levels of benefits supportable by specified cost or contribution levels; and
 - f. projection of pension obligations, **periodic costs** or **actuarially determined contributions**, and other related measurements, such as cash flow projections and projections of a plan’s **funded status**.

Throughout this standard, any reference to selecting assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods** also includes giving advice on selecting assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods**. In addition, any reference to developing or modifying a **cost allocation procedure** or **contribution allocation procedure** includes giving advice on developing or modifying a **cost allocation procedure** or **contribution allocation procedure**.

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, and ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, provide guidance concerning assumptions. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*, provides guidance concerning asset valuation methods. In the event of a conflict between the guidance provided in this ASOP and the guidance in any of the aforementioned ASOPs, this standard governs.

This standard does not apply to actuaries when performing services with respect to individual benefit calculations, individual benefit statement estimates, annuity pricing, nondiscrimination testing, and social insurance programs as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless an ASOP on social insurance explicitly calls for application of this standard).

As discussed in ASOP No. 41, *Actuarial Communications*, an assumption or method may be selected by the actuary or selected by another party. Nothing in this standard is intended to require the actuary to select an assumption or method that has otherwise been selected by another party. When performing actuarial services using an assumption or method not selected by the actuary, the guidance in section 3 and section 4 concerning assessment and disclosure applies.

This standard does not require the actuary to evaluate the ability or willingness of the plan sponsor or other contributing entity to make contributions to the plan when due.

If a conflict exists between this standard and applicable law (statutes, regulations, and other legally binding authority), the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any actuarial report that meets the following criteria: (a) the actuarial report is issued on or after February 15, 2023; and (b) the

measurement date in the actuarial report is on or after February 15, 2023.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Actuarial Accrued Liability**—The portion of the **actuarial present value of projected benefits** (and **expenses**, if applicable), as determined under a particular **actuarial cost method** that is not provided for by future **normal costs**. Under certain **actuarial cost methods**, the **actuarial accrued liability** is dependent upon the actuarial value of assets.
- 2.2 **Actuarial Cost Method**—A procedure for allocating the **actuarial present value of projected benefits** (and **expenses**, if applicable) to time periods, usually in the form of a **normal cost** and an **actuarial accrued liability**. For purposes of this standard, a pay-as-you-go method is not considered to be an **actuarial cost method**.
- 2.3 **Actuarial Present Value**—The discounted value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of assumptions with regard to future events, observations of market or other valuation data, or a combination of assumptions and observations.
- 2.4 **Actuarial Present Value of Projected Benefits**—The **actuarial present value** of benefits that are expected to be paid in the future, taking into account the effect of such items as future service, advancement in age, and anticipated future compensation (sometimes referred to as the “present value of future benefits”).
- 2.5 **Actuarial Valuation**—The measurement of relevant pension obligations and, when applicable, the determination of **periodic costs** or **actuarially determined contributions**.
- 2.6 **Actuarially Determined Contribution**—A potential payment to the plan as determined by the actuary using a **contribution allocation procedure**. It may or may not be the amount actually paid by the plan sponsor or other contributing entity.
- 2.7 **Amortization Method**—A method under a **contribution allocation procedure** or **cost allocation procedure** for determining the amount, timing, and pattern of recognition of the unfunded **actuarial accrued liability**.
- 2.8 **Contribution Allocation Procedure**—A procedure that determines one or more **actuarially determined contributions** for a plan. The procedure uses an **actuarial cost method** and may use an asset valuation method, an **amortization method**, or an **output smoothing method**. The procedure may produce a single value, such as **normal cost** plus an amortization payment of the unfunded **actuarial accrued liability**, or a range of values, such as the range from the ERISA minimum required contribution to the maximum tax-deductible amount.

- 2.9 **Cost Allocation Procedure**—A procedure that determines the **periodic cost** for a plan (for example, the procedure to determine the net periodic pension cost under accounting standards). The procedure uses an **actuarial cost method**, and may use an asset valuation method or an **amortization method**.
- 2.10 **Expenses**—Administrative or investment fees or other payments borne or expected to be borne by the plan.
- 2.11 **Funded Status**—Any comparison of a particular measure of plan assets to a particular measure of pension obligations.
- 2.12 **Funding Valuation**—A measurement of pension obligations or projection of cash flows performed by the actuary intended to be used by the principal to determine plan contributions or to evaluate the adequacy of specified contribution levels to support benefit provisions.
- 2.13 **Gain and Loss Analysis**—An analysis of the effect on the plan’s **funded status** between two **measurement dates** resulting from the difference between expected experience based upon a set of assumptions and actual experience.
- 2.14 **Immediate Gain Actuarial Cost Method**—An **actuarial cost method** under which actuarial gains and losses are included as part of the unfunded **actuarial accrued liability** of the pension plan, rather than as part of the **normal cost** of the plan.
- 2.15 **Market-Consistent Present Value**—An **actuarial present value** that is estimated to be consistent with the price at which benefits that are expected to be paid in the future would trade in an open market between a knowledgeable seller and a knowledgeable buyer. The existence of a deep and liquid market for pension cash flows or for entire pension plans is not a prerequisite for this present value measurement.
- 2.16 **Measurement Date**—The date as of which the values of the pension obligations and, if applicable, assets are determined.
- 2.17 **Normal Cost**—The portion of the **actuarial present value of projected benefits** (and **expenses**, if applicable) that is allocated to a period, typically twelve months, under the **actuarial cost method**. Under certain **actuarial cost methods**, the **normal cost** is dependent upon the actuarial value of assets.
- 2.18 **Output Smoothing Method**—A method to reduce volatility of the results of a **contribution allocation procedure**. The **output smoothing method** may be a component of the **contribution allocation procedure** or may be applied to the results of a **contribution allocation procedure**. **Output smoothing methods** include techniques such as 1) phasing in the impact of assumption changes on contributions, 2) blending a prior valuation with a subsequent valuation to determine contributions, or 3) placing a corridor around changes in the dollar amount, contribution rate, or percentage change in contributions from year to

year. An **output smoothing method** may involve a combination of techniques. For purposes of this standard, an asset valuation method is not an **output smoothing method**.

- 2.19 **Participant**—An individual who satisfies the requirements for participation in the plan.
- 2.20 **Periodic Cost**—The amount assigned to a period using a **cost allocation procedure** for purposes other than funding. This may be a function of pension obligations, **normal cost**, **expenses**, or assets. In many situations, **periodic cost** is determined for accounting purposes.
- 2.21 **Plan Provisions**—The relevant terms of the plan document and any relevant administrative practices known to the actuary.
- 2.22 **Prescribed Assumption or Method Set by Another Party**—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards gives the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method set by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is deemed to be a **prescribed assumption or method set by another party**.
- 2.23 **Prescribed Assumption or Method Set by Law**—A specific assumption or method that is mandated or that is selected from a specified range or set of assumptions or methods that is deemed to be acceptable by applicable law (statutes, regulations, or other legally binding authority). For this purpose, an assumption or method set by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is not deemed to be a **prescribed assumption or method set by law**.
- 2.24 **Spread Gain Actuarial Cost Method**—An **actuarial cost method** under which actuarial gains and losses are included as part of the current and future **normal costs** of the plan.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—Measuring pension obligations and determining **periodic costs** or **actuarially determined contributions** are processes in which the actuary may be required to make judgments or recommendations on the choice of assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods**.

The actuary may have the responsibility and authority to select some or all assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods**. In other circumstances, the actuary may be asked to advise the individuals who have that responsibility and authority. In yet other circumstances, the actuary may perform actuarial calculations using **prescribed assumptions or methods set by another party** or **prescribed assumptions or methods set by law**.

3.2 **General Procedures**—When measuring pension obligations, determining **periodic costs**, or determining **actuarially determined contributions**, the actuary should perform the following general procedures:

- a. identify the purpose of the measurement (section 3.3);
- b. identify the **measurement date** (section 3.4);
- c. identify **plan provisions** applicable to the measurement and any associated valuation issues (section 3.5);
- d. gather data necessary for the measurement (section 3.6);
- e. obtain from the principal other information necessary for the purpose of the measurement (section 3.7);
- f. select assumptions (section 3.8);
- g. measure accrued or vested benefits, if applicable (section 3.9);
- h. measure **market-consistent present values**, if applicable (section 3.10);
- i. calculate a low-default-risk obligation measure, if applicable (section 3.11);
- j. reflect how plan or plan sponsor assets as of the **measurement date** are reported, if applicable (section 3.12);
- k. select an **actuarial cost method**, if applicable (section 3.13);
- l. select an **amortization method**, if applicable (section 3.14);
- m. select an asset valuation method, if applicable (section 3.15);
- n. select an **output smoothing method**, if applicable (section 3.16);
- o. select a **cost allocation procedure** or **contribution allocation procedure**, if applicable (sections 3.17 and 3.18);
- p. assess the implications of the **contribution allocation procedure** or plan's funding policy, if applicable (section 3.19);
- q. take into account the contribution lag, if applicable (section 3.20);
- r. calculate a reasonable **actuarially determined contribution**, if applicable (section 3.21);

- s. perform a **gain and loss analysis**, if applicable (section 3.22);
- t. take into account the sources of significant volatility, if applicable (section 3.23);
- u. assess the assumptions and methods not selected by the actuary, if applicable (section 3.24); and
- v. consider preparing and retaining documentation (section 3.26).

The actuary should refer to ASOP No. 56, *Modeling*, for guidance with respect to models when measuring pension obligations, determining **periodic costs**, or determining **actuarially determined contributions**.

In addition, the actuary may use approximations and estimates where circumstances warrant (section 3.25).

3.3 **Purpose of the Measurement**—The actuary should reflect the purpose of the measurement. Examples of measurement purposes include the following:

- a. determining **periodic costs** or **actuarially determined contributions**;
- b. assessing **funded status**;
- c. pricing benefit provisions;
- d. comparing benefit provisions between plans;
- e. determining withdrawal liabilities or benefit plan settlements; and
- f. measuring pension obligations for plan sponsor mergers and acquisitions.

3.3.1 **Projected or Point-in-Time Measurements**—The actuary should consider using different assumptions or methods for measurements projected into the future versus point-in-time measurements.

3.3.2 **Uncertainty or Risk**—The actuary should refer to the guidance on uncertainty and risk in ASOP No. 41 and ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

3.4 **Measurement Date Considerations**—The actuary should address the following **measurement date** considerations:

3.4.1 **Information as of a Different Date**—The actuary may estimate asset and **participant** information at the **measurement date** on the basis of information as of a different date. In these circumstances, the actuary should make appropriate

adjustments to the data. Alternatively, the actuary may calculate the obligations as of a different date and then adjust the obligations to the **measurement date** (see section 3.4.3 for additional guidance). In either case, the actuary should determine that any such adjustments are reasonable in the actuary’s professional judgment, given the purpose of the measurement.

3.4.2 **Events after the Measurement Date**—If the actuary is aware of events that occur subsequent to the **measurement date** and prior to the date of the actuarial communication, the actuary should reflect those events appropriately for the purpose of the measurement. Unless the purpose of the measurement requires or prohibits the inclusion of such events, the actuary may, but need not, reflect these events in the measurement.

3.4.3 **Adjustment of Prior Measurement**—The actuary may adjust the results from a prior measurement in lieu of performing a new detailed measurement if, in the actuary’s professional judgment, such an adjustment would produce a reasonable result for the purpose of the new measurement. To determine whether such an adjustment would produce a reasonable result, the actuary should consider reflecting items such as the following, if known to the actuary:

- a. changes in the number of **participants** or the demographic characteristics of that group;
- b. length of time since the prior measurement;
- c. differences between actual and expected contributions, benefit payments, **expenses**, and investment performance;
- d. changes in economic and demographic expectations; and
- e. changes in **plan provisions**.

When adjusting obligations from a prior **measurement date**, the actuary should consider using revised assumptions to determine the obligations if appropriate for the purpose of the new measurement.

3.5 **Plan Provisions**—When measuring pension obligations and determining **periodic costs** or **actuarially determined contributions**, the actuary should reflect all significant **plan provisions** known to the actuary, as appropriate for the purpose of the measurement. However, if in the actuary’s professional judgment, omitting a significant **plan provision** is appropriate for the purpose of the measurement, the actuary should disclose the omission in accordance with section 4.1(e).

3.5.1 **Adopted Changes in Plan Provisions**—Unless contrary to applicable law or not appropriate for the purpose of the measurement, the actuary should reflect **plan provisions** adopted on or before the **measurement date** for at least the portion of

the period during which those provisions are in effect. Unless the purpose of the measurement requires or prohibits that such **plan provisions** be reflected, the actuary may, but need not, reflect **plan provisions** adopted after the **measurement date**.

3.5.2 **Proposed Changes in Plan Provisions**—The actuary should reflect proposed changes in **plan provisions** as appropriate for the purpose of the measurement.

3.5.3 **Plan Provisions That are Difficult to Measure**—Some **plan provisions** may create pension obligations that are difficult to appropriately measure using traditional valuation procedures. Examples of such **plan provisions** include the following:

- a. gain-sharing provisions that trigger benefit increases when investment returns are favorable but do not trigger benefit decreases when investment returns are unfavorable;
- b. floor-offset provisions that provide a minimum defined benefit in the event a **participant's** account balance in a separate plan falls below some threshold;
- c. benefit provisions that are tied to an external index, but subject to a floor or ceiling, such as certain cost-of-living-adjustment provisions and cash-balance-crediting provisions; and
- d. benefit provisions that may be triggered by an event such as a plant shutdown or a change in control of the plan sponsor.

For such **plan provisions**, the actuary should consider using alternative valuation procedures, such as stochastic modeling, option-pricing techniques, or deterministic procedures in conjunction with assumptions that are adjusted to reflect the impact of variations in experience from year to year. When selecting alternative valuation procedures for such **plan provisions**, the actuary should use professional judgment based on the purpose of the measurement and other relevant factors.

The actuary should disclose the valuation procedures used to value any significant **plan provisions** of the type described in this section 3.5.3, in accordance with section 4.1(f).

3.6 **Data**—With respect to the data used for measurements, including data supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.6.1 **Participants**—The actuary should include in the measurement all **participants** reported to the actuary, except in appropriate circumstances where the actuary may exclude persons such as those below a minimum age or service level. When

appropriate, the actuary may include employees who might become **participants** in the future.

- 3.6.2 **Hypothetical Data**—When appropriate, the actuary may prepare measurements based on assumed demographic characteristics of current or future plan **participants**.
- 3.7 **Other Information from the Principal**—The actuary should obtain from the principal other information, such as accounting policies or funding elections, necessary for the purpose of the measurement.
- 3.8 **Assumptions**—The actuary should refer to ASOP Nos. 27 and 35 for guidance on the selection and assessment of assumptions.

In addition, the actuary should assess whether the combined effect of assumptions is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic) except when provisions for adverse deviation are included or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51. For this purpose, the actuary should assess assumptions other than 1) **prescribed assumptions or methods set by law** and 2) assumptions that the actuary has not selected and is unable to assess for reasonableness for the purpose of the measurement.

- 3.9 **Measuring the Value of Accrued or Vested Benefits**—Depending on the scope of the assignment, the actuary may measure the value of any accrued or vested benefits as of a **measurement date**. The actuary should take into account the following when making such measurements:
- a. relevant **plan provisions** and applicable law;
 - b. the status of the plan (for example, whether the plan is assumed to continue to exist or be terminated);
 - c. the contingencies upon which benefits become payable, which may differ for ongoing-basis and termination-basis measurements;
 - d. the extent to which **participants** have satisfied relevant eligibility requirements for accrued or vested benefits and the extent to which future service or advancement in age may satisfy those requirements;
 - e. whether or the extent to which death, disability, or other ancillary benefits are accrued or vested;
 - f. whether the **plan provisions** regarding benefits earned provide an appropriate attribution pattern for the purpose of the measurement (for example, if the plan's benefit accruals are significantly back-loaded, it may be appropriate to value accrued benefits with a less back-loaded attribution pattern); and

- g. the impact of a special event (such as a plant shutdown or plan termination), when applicable. Examples of factors that may impact the measurement include the following:
1. the effect of the special event on continued employment;
 2. the impact of the special event on **participant** behavior due to factors such as subsidized payment options;
 3. **expenses** associated with a potential plan termination, including transaction costs to liquidate plan assets; and
 4. changes in investment policy.

3.10 Market-Consistent Present Values—When calculating a **market-consistent present value**, the actuary should do the following:

- a. select assumptions based on the actuary’s observation of the estimates inherent in market data in accordance with the guidance in ASOP Nos. 27 and 35, depending on the purpose of the measurement; and
- b. reflect benefits earned as of the **measurement date**.

In addition, the actuary may reflect benefit payment default risk or the financial health of the plan sponsor in the calculation.

3.11 Low-Default-Risk Obligation Measure—When performing a **funding valuation**, the actuary should calculate and disclose a low-default-risk obligation measure of the benefits earned (or costs accrued if appropriate under the actuarial cost method used for this purpose) as of the **measurement date**. The actuary need not calculate and disclose this obligation measure more than once per year.

When calculating this measure, the actuary should use an **immediate gain actuarial cost method**.

When calculating this measure, the actuary should select a discount rate or discount rates derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future. Examples of discount rates that may meet these requirements include, but are not limited to, the following:

- a. US Treasury yields;
- b. rates implicit in settlement of pension obligations including payment of lump sums and purchases of annuities from insurance companies;

- c. yields on corporate or tax-exempt general obligation municipal bonds that receive one of the two highest ratings given by a recognized ratings agency;
- d. non-stabilized ERISA funding rates for single employer plans; and
- e. multiemployer current liability rates.

When plan provisions create pension obligations that are difficult to appropriately measure using traditional valuation procedures, such as benefits affected by actual investment returns, movements in a market index, or other similar factors, the actuary should consider using alternative valuation procedures such as those described under section 3.5.3 to calculate the low-default-risk obligation measure of those benefits earned or costs accrued as of the **measurement date**.

For purposes of this obligation measure, the actuary should consider reflecting the impact, if any, of investing plan assets in low-default-risk fixed income securities on the pattern of benefits expected to be paid in the future, such as in a variable annuity plan.

When calculating this measure, the actuary should not reflect benefit payment default risk or the financial health of the plan sponsor.

Other than the discount rate or discount rates, the actuary may use the same assumptions used in the **funding valuation** for this measure. Alternatively, the actuary may select other assumptions that are consistent with the discount rate or discount rates and reasonable for the purpose of the measurement, in accordance with ASOP Nos. 27 and 35.

The actuary should provide commentary to help the intended user understand the significance of the low-default-risk obligation measure with respect to the **funded status** of the plan, plan contributions, and the security of **participant** benefits. The actuary should use professional judgment to determine the appropriate commentary for the intended user.

- 3.12 **Relationship between Asset and Obligation Measurement**—The actuary should reflect how plan or plan sponsor assets as of the **measurement date** are reported. For example, if the plan or plan sponsor assets have been reduced to reflect a lump sum paid, the lump sum or the related annuity value should also be excluded from the obligation.
- 3.13 **Actuarial Cost Method**—When selecting an **actuarial cost method** to assign **periodic costs** or **actuarially determined contributions** to time periods in advance of the time benefit payments are due, the actuary should select an **actuarial cost method** that meets the following criteria:
- a. the period over which **normal costs** are allocated for a **participant** begins no earlier than the date of employment and does not extend beyond the last assumed retirement age. The period may be applied to each individual **participant** or to groups of **participants** on an aggregate basis;

When a plan has no active **participants** and no **participants** are accruing benefits, a reasonable **actuarial cost method** will not produce a **normal cost** for benefits. For purposes of this standard, an employee does not cease to be an active **participant** merely because he or she is no longer accruing benefits under the plan;

- b. the attribution of **normal costs** bears a reasonable relationship to some element of the plan's benefit formula or the **participant's** compensation or service. The attribution basis may be applied on an individual or group basis. For example, the **actuarial present value of projected benefits** for each **participant** may be allocated by that **participant's** own compensation or may be allocated by the aggregated compensation for a group of **participants**;
- c. **expenses** are considered when assigning **periodic costs** or **actuarially determined contributions** to time periods. For example, the **expenses** for a period may be added to the **normal cost** for benefits, or **expenses** may be reflected as an adjustment to the investment return assumption or the discount rate. As another example, **expenses** may be reflected as a percentage of pension obligation or **normal cost**; and
- d. the sum of the **actuarial accrued liability** and the **actuarial present value** of future **normal costs** equals the **actuarial present value of projected benefits** and **expenses**, to the extent **expenses** are included in the **actuarial accrued liability** and **normal cost**. For purposes of this criterion, under a **spread gain actuarial cost method**, the sum of the actuarial value of assets and the unfunded **actuarial accrued liability**, if any, shall be considered to be the **actuarial accrued liability**.

When disclosing a **funded status** measurement using a **spread gain actuarial cost method**, the actuary should also calculate and disclose a **funded status** measurement using an **immediate gain actuarial cost method**.

3.14 **Amortization Method**—When selecting an **amortization method**, the actuary should select an **amortization method** for each amortization base that is expected to produce amortization payments that fully amortize the amortization base within a reasonable time period or reduce the outstanding balance by a reasonable amount each year.

For purposes of determining a reasonable time period or a reasonable amount, the actuary should take into account factors including, but not limited to, the following, if applicable:

- a. whether the **amortization method** is open or closed;
- b. the source of the amortization base;
- c. the anticipated pattern of the amortization payments, including the length of time until amortization payments exceed nominal interest on the outstanding balance;

- d. whether the amortization base is positive or negative;
- e. the duration of the **actuarial accrued liability**;
- f. the average remaining service lifetime of active plan **participants**; and
- g. the **funded status** of the plan or period to plan insolvency.

When selecting an **amortization method**, the actuary should select an **amortization method** that is expected to produce total amortization payments that are expected to fully amortize the unfunded **actuarial accrued liability** within a reasonable time period or reduce the unfunded **actuarial accrued liability** by a reasonable amount within a sufficiently short period.

The actuary should assess whether the unfunded **actuarial accrued liability** is expected to be fully amortized.

For purposes of this section, the actuary should assume that all assumptions will be realized and **actuarially determined contributions** will be made when due.

- 3.15 Asset Valuation Method—The actuary should refer to ASOP No. 44 for guidance on the selection and use of an asset valuation method.
- 3.16 Output Smoothing Method—When selecting an **output smoothing method**, the actuary should select an **output smoothing method** that results in a reasonable relationship between the smoothed contribution and the corresponding **actuarially determined contribution** without output smoothing. A reasonable relationship includes the following:
 - a. the **output smoothing method** produces a value that does not fall below a reasonable range around the corresponding **actuarially determined contribution** without output smoothing; and
 - b. any shortfalls of the smoothed contribution to the corresponding **actuarially determined contribution** without output smoothing are recognized within a reasonable period of time.
- 3.17 Allocation Procedure—When selecting a **cost allocation procedure** or **contribution allocation procedure**, the actuary should take into account the following:
 - a. the balance among benefit security, intergenerational equity, and stability or predictability of **periodic costs** or **actuarially determined contributions**;
 - b. the timing and duration of expected benefit payments;
 - c. the nature and frequency of plan amendments; and

- d. relevant input from the principal, for example, a desire to achieve a target funding level within a specified time frame.
- 3.18 **Consistency between Contribution Allocation Procedure and the Payment of Benefits**—When selecting a **contribution allocation procedure**, the actuary should select a **contribution allocation procedure** that, in the actuary's professional judgment, is consistent with the plan accumulating adequate assets to make benefit payments when due, assuming that all assumptions will be realized and that the plan sponsor or other contributing entity will make **actuarially determined contributions** when due. In some circumstances, a **contribution allocation procedure** may not be expected to produce adequate assets to make benefit payments when they are due even if the actuary uses a combination of assumptions selected in accordance with ASOP Nos. 27 and 35, an **actuarial cost method** selected in accordance with section 3.13 of this standard, and an asset valuation method selected in accordance with ASOP No. 44.
- Examples of such circumstances include the following:
- a. a plan covering a sole proprietor with funding that continues past an expected retirement date with payment due in a lump sum;
 - b. using the aggregate **actuarial cost method** for a plan covering three employees, in which the principal is near retirement and the other employees are relatively young; and
 - c. a plan amendment with an amortization period so long that overall plan **actuarially determined contributions** would be scheduled to occur too late to make plan benefit payments when due.
- 3.19 **Implications of Contribution Allocation Procedure or Funding Policy**—When performing a **funding valuation**, the actuary should do the following:
- a. qualitatively assess the implications of the **contribution allocation procedure** or the plan's funding policy on the plan's expected future contributions and **funded status**;
 - b. estimate how long before any contribution as determined by the **contribution allocation procedure** or the plan's funding policy is expected to exceed the **normal cost**, plus interest on the unfunded **actuarial accrued liability**, if applicable;
 - c. estimate the period over which the unfunded **actuarial accrued liability**, if any, is expected to be fully amortized; and
 - d. assess whether the **contribution allocation procedure** or funding policy is significantly inconsistent with the plan accumulating assets adequate to make

benefit payments when due, and estimate the approximate time until assets are depleted.

For purposes of this section, contributions set by law or by a contract, such as a collective bargaining agreement, constitute a funding policy.

For purposes of this section, the actuary may presume that all assumptions will be realized and the plan sponsor (or other contributing entity) will make contributions anticipated by the **contribution allocation procedure** or funding policy.

- 3.20 **Contribution Lag**—When calculating an **actuarially determined contribution**, the actuary should consider reflecting the passage of time between the **measurement date** and the expected timing of actual contributions.
- 3.21 **Reasonable Actuarially Determined Contribution**—When performing a **funding valuation**, except where the **actuarially determined contribution** is based on a **prescribed assumption or method set by law**, the actuary should also calculate and disclose a reasonable **actuarially determined contribution**. For this purpose, an **actuarially determined contribution** is reasonable if it uses a **contribution allocation procedure** that satisfies the following conditions:
- a. all significant assumptions selected by the actuary are reasonable, all significant **prescribed assumptions or methods set by another party** do not significantly conflict with what in the actuary's professional judgment is reasonable in accordance with ASOP Nos. 27 and 35, and the combined effect of these assumptions is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic) except when provisions for adverse deviation are included;
 - b. the **actuarial cost method** used should be consistent with section 3.13. If an **actuarial cost method** with individual attribution is used, each **participant's normal cost** should be based on the **plan provisions** applicable to that **participant**;
 - c. if an **amortization method** is used, it should be consistent with section 3.14;
 - d. if an asset valuation method is used, it should be consistent with section 3.15;
 - e. if an **output smoothing method** is used, it should be consistent with section 3.16; and
 - f. the **contribution allocation procedure** should, in the actuary's professional judgment, be consistent with the plan accumulating assets adequate to make benefit payments when due, assuming that all assumptions will be realized and that the plan sponsor or other contributing entity will make **actuarially determined contributions** when due.

- 3.22 **Gain and Loss Analysis**—When performing a **funding valuation**, the actuary should perform a **gain and loss analysis** for the period between the prior **measurement date** and the current **measurement date**, unless in the actuary’s professional judgment, successive **gain and loss analyses** would not be appropriate for assessing the reasonableness of the assumptions. For example, successive **gain and loss analyses** may not provide useful information about the reasonableness of the assumptions for a small plan in which a single individual accounts for most of the **actuarial accrued liability**. If a **gain and loss analysis** is performed, the actuary should at least separate the total gain or loss into investment gain or loss and other gain or loss.
- 3.23 **Volatility**—If the scope of the actuary’s assignment includes an analysis of the potential range of future pension obligations, **periodic costs**, **actuarially determined contributions**, or **funded status**, the actuary should take into account sources of volatility that, in the actuary’s professional judgment, are significant. Examples of potential sources of volatility include the following:
- a. plan experience differing from that anticipated by the economic or demographic assumptions, as well as the effect of new entrants;
 - b. changes in economic or demographic assumptions;
 - c. the effect of discontinuities in applicable law or accounting standards, such as full funding limitations, the end of amortization periods, or liability recognition triggers;
 - d. the delayed effect of smoothing techniques, such as the pending recognition of prior experience losses; and
 - e. patterns of rising or falling **periodic cost** expected when using a particular **actuarial cost method** for the plan population.
- When analyzing potential variations in economic and demographic experience or assumptions, the actuary should refer to ASOP No. 51 for additional guidance, where applicable.
- 3.24 **Assessment of Assumptions and Methods Not Selected by the Actuary**—For each **measurement date**, the actuary should assess whether an assumption or method not selected by the actuary is reasonable for the purpose of the measurement, other than 1) **prescribed assumptions or methods set by law** and 2) assumptions or methods that the actuary has not selected and is unable to assess for reasonableness for the purpose of the measurement. For purposes of this assessment, reasonable assumptions or methods are not necessarily limited to those the actuary would have selected for the measurement. In this assessment, the actuary should determine whether the assumption or method significantly conflicts with what, in the actuary’s professional judgment, would be reasonable for the purpose of the measurement. If, in the actuary’s professional judgment, there is a

significant conflict, the actuary should disclose this conflict in accordance with section 4.2(a).

3.25 **Approximations and Estimates**—Where circumstances warrant, the actuary may use approximations or estimates in performing the actuarial services. The following are some examples of such circumstances:

- a. situations in which the actuary reasonably expects the results to be substantially the same as the results of detailed calculations;
- b. situations in which the actuary's assignment requires informal or rough estimates; and
- c. situations in which the actuary reasonably expects the amounts being approximated or estimated to represent only a minor part of the overall pension obligation, **periodic cost**, or **actuarially determined contribution**.

When using approximations or estimates, the actuary should use professional judgment to establish a balance between the degree of refinement of methodology and whether the impact on the results is material.

3.26 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing documentation, the actuary should consider preparing such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 23, 27, 35, 41, 44, 51, and 56. In addition, such communication should contain the following disclosures when relevant and material. An actuarial communication can comply with some, or all, of the specific requirements of this section by making reference to information contained in other actuarial communications available to the intended users (as defined in ASOP No. 41), such as an annual **actuarial valuation** report.

- a. a statement of the purpose of the measurement and a statement to the effect that the measurement may not be applicable for other purposes (see section 3.3);
- b. the **measurement date** (see section 3.4);

- c. a description of adjustments made for events after the **measurement date** (see section 3.4.2);
- d. a description of adjustments of prior measurements (see section 3.4.3);
- e. an outline or summary of the **plan provisions** reflected in the **actuarial valuation**, a description of known changes in significant **plan provisions** reflected in the **actuarial valuation** from those used in the immediately preceding measurement prepared for a similar purpose, and a description of any significant **plan provisions** not reflected in the **actuarial valuation**, along with the rationale for not reflecting such significant **plan provisions** (see section 3.5);
- f. a description of the valuation procedures used to value any significant **plan provisions** of the type described in section 3.5.3, such that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report (see section 3.5.3);
- g. the date(s) as of which the **participant** and financial information were compiled;
- h. a summary of the **participant** information (see section 3.6.1);
- i. if hypothetical data are used, a description of the data (see section 3.6.2);
- j. a description of any accounting policies or funding elections made by the principal that are pertinent to the measurement (see section 3.7);
- k. a description of known changes in significant assumptions and methods from those used in the immediately preceding measurement prepared for a similar purpose. For assumption and method changes that are not the result of a **prescribed assumption or method set by another party** or a **prescribed assumption or method set by law**, the actuary should include an explanation of the information and analysis that led to those changes. The explanation may be brief but should be pertinent to the plan's circumstances (see section 3.8);
- l. a statement indicating whether, in the actuary's professional judgment, the combined effect of the assumptions other than 1) **prescribed assumptions or methods set by law** and 2) assumptions that the actuary has not selected and is unable to assess for reasonableness for the purpose of the measurement is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation are included or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51 (see section 3.8);
- m. a description of the types of benefits regarded as accrued or vested if the actuary measured the value of accrued or vested benefits, and, to the extent the attribution

pattern of accrued benefits differs from or is not described by the **plan provisions**, a description of the attribution pattern (see section 3.9);

- n. a description of whether and how benefit payment default risk or the financial health of the plan sponsor was included, if a **market-consistent present value** measurement was performed (see section 3.10);
- o. if applicable, a low-default-risk obligation measure (see section 3.11). In addition to the measure, the actuary should disclose the following:
 - 1. the discount rate or discount rates used and rationale for selection;
 - 2. a description of other significant assumptions, if any, that differ from those used in the **funding valuation** and rationale for their selection;
 - 3. the **immediate gain actuarial cost method** used;
 - 4. a description of the valuation procedures that differ from those used in the **funding valuation** to value any significant **plan provisions** of the type described in section 3.5.3 such that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work; and
 - 5. commentary to help the intended user understand the significance of the low-default-risk obligation measure with respect to the **funded status** of the plan, plan contributions, and the security of **participant** benefits;
- p. a description of the **actuarial cost method** and the manner in which **normal costs** are allocated, in sufficient detail such that another actuary qualified in the same practice area would be able to understand the significant characteristics of the method (for example, how the **actuarial cost method** is applied to multiple benefit formulas, compound benefit formulas, or benefit formula changes, where such **plan provisions** are significant) (see section 3.13);
- q. if applicable, a description of the particular measures of plan assets and obligations that are included in the actuary's disclosure of the plan's **funded status**. For **funded status** measurements that are not prescribed by federal law or regulation, the actuary should accompany this description with each of the following additional disclosures:
 - 1. whether the **funded status** measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations;
 - 2. whether the **funded status** measure is appropriate for assessing the need for or the amount of future contributions; and

3. if applicable, a statement that the **funded status** measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets;
- r. **funded status** based on an **immediate gain actuarial cost method** if the actuary discloses a **funded status** based on a **spread gain actuarial cost method** (see section 3.13). A description of the **immediate gain actuarial cost method** used for this purpose should be disclosed;
- s. the remaining balance to be amortized, the remaining amortization period, and the amortization payment included in the **periodic cost** or **actuarially determined contribution** for each amortization base along with a disclosure if the unfunded **actuarial accrued liability** is not expected to be fully amortized (see section 3.14);
- t. a description of any **output smoothing method** used. If an **output smoothing method** is used, the actuary should also disclose the corresponding **actuarially determined contribution** without output smoothing (see section 3.16);
- u. a description of the **cost allocation procedure** or **contribution allocation procedure** including a description of the **amortization method** and any pay-as-you-go funding (i.e., the intended payment by the plan sponsor of some or all benefits when due) (see section 3.17);
- v. a description of all changes in **cost allocation procedures** or **contribution allocation procedures** that are not a result of a **prescribed assumption or method set by law**, including the resetting of an actuarial asset value. The actuary should disclose the reason for the change and the general effects of the change on relevant **periodic cost**, **actuarially determined contribution**, **funded status**, or other measures by words or numerical data, as appropriate. The disclosure of the reason for the change and the general effects of the change may be brief but should be pertinent to the plan's circumstances (see section 3.17);
- w. a qualitative description of the implications of the **contribution allocation procedure** or plan's funding policy on future expected plan contributions and **funded status** (see section 3.19[a]), if applicable. The actuary should disclose the significant characteristics of the **contribution allocation procedure** or plan's funding policy, and the significant assumptions used in the assessment;
- x. if applicable, an estimate of how long before any contribution as determined by the **contribution allocation procedure** or the plan's funding policy is expected to exceed the **normal cost**, plus interest on the unfunded **actuarial accrued liability** (see section 3.19[b]);
- y. an estimate of the period over which the unfunded **actuarial accrued liability**, if any, is expected to be fully amortized (see section 3.19[c]);

- z. if applicable, a statement indicating that the **contribution allocation procedure** or funding policy is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, as well as an estimate of the approximate time until assets are depleted (see section 3.19[d]);
- aa. if applicable, a reasonable **actuarially determined contribution**, the corresponding **funded status**, and any material assumptions or methods that were used in the calculation that are not otherwise disclosed. The actuary should include a description of how pertinent conditions discussed in section 3.17 have been taken into account in determining the reasonable **actuarially determined contribution** (see section 3.21). The disclosure may be brief but should be relevant to the plan's circumstances;
- bb. if applicable, the results of the **gain and loss analysis** separating the total gain or loss into investment gain or loss and other gain or loss. The actuary may meet the disclosure requirements of this section by providing more detailed results of the **gain and loss analysis** performed (see section 3.22). For example, the actuary could separate the non-investment gain or loss into demographic and economic gains or losses, or could identify gains or losses caused by individual decrements (for example, withdrawal, retirement, mortality) and other economic factors (for example, salary growth, inflation);
- cc. if, in the actuary's professional judgment, the actuary's use of approximations and estimates could produce results that differ materially from results based on a detailed calculation, a statement to this effect (see section 3.25); and
- dd. a statement, appropriate for the intended users, indicating that future measurements (for example, of pension obligations, **periodic costs**, **actuarially determined contributions**, or **funded status**, as applicable) may differ significantly from the current measurement. For example, a statement such as the following could be applicable: "Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's **funded status**); and changes in **plan provisions** or applicable law." (See section 3.23)

In addition, the actuarial communication should include one of the following:

1. if the scope of the actuary's assignment included an analysis of the range of such future measurements, disclosure of the results of such analysis together with a description of the factors considered in determining such range; or

2. a statement indicating that, due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.
- 4.2 **Disclosures in an Actuarial Report about Assumptions or Methods Not Selected by the Actuary**—The actuary should include disclosures in an actuarial report stating the source of any material assumptions or methods that the actuary has not selected.
- With respect to any assumption or method that the actuary has not selected, other than **prescribed assumptions or methods set by law**, the actuary's report should identify the following, if applicable:
- a. any assumption or method that the actuary has not selected that, individually or in combination with other assumptions or methods, significantly conflicts with what, in the actuary's professional judgment, is reasonable for the purpose of the measurement (see section 3.24); or
 - b. any assumption or method that the actuary has not selected and is unable to assess for reasonableness for the purpose of the measurement.
- 4.3 **Additional Disclosures in an Actuarial Report**—The actuary also should include disclosures in an actuarial report in accordance with ASOP No. 41 for the following circumstances:
- a. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - b. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.
- 4.4 **Confidential Information**—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

Appendix

Comments on the Third Exposure Draft and Responses

The third exposure draft of the proposed revision of ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, was approved in June 2021 with a comment deadline of October 15, 2021. Seven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of the appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Pension Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in the appendix includes the Pension Committee and the ASB. Also, the section numbers and titles used in the appendix refer to those in the third exposure draft.

GENERAL COMMENTS	
Comment	One commentator recommended that ASOP No. 4 explicitly recognize and state that many provisions would not apply to small defined benefit plans.
Response	The reviewers disagree and made no change.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested a reference to ASOP No. 56, <i>Modeling</i> , be added to the scope section.
Response	The reviewers disagree and made no change in response to this comment. The reviewers note the paragraph in scope addresses potential conflicts with pension-related ASOPs that provide guidance directly related to this standard. The reviewers also note that a reference to ASOP No. 56 was added to section 3.2.
SECTION 2. DEFINITIONS	
Section 2.8, Contribution Allocation Procedure	
Comment	One commentator suggested changing the second sentence in section 2.8 to state, “The procedure uses an actuarial cost method and may use an asset valuation method, an amortization method, and/or an output smoothing method.”
Response	The reviewers disagree and made no change as the use of “and/or” is inconsistent with ASOP style since the use of “or” incorporates “and.”
Section 2.9, Cost Allocation Procedure	
Comment	One commentator suggested changing the second sentence in section 2.9 to state, “The procedure uses an actuarial cost method, and may use an asset valuation method and/or an amortization method.”
Response	The reviewers disagree and made no change as the use of “and/or” is inconsistent with ASOP style since the use of “or” incorporates “and.”

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, General Procedures	
Comment	One commentator suggested adding modeling to the list of general procedures, as well as adding a new subsection.
Response	The reviewers disagree on the inclusion of a new subsection but added a reference to ASOP No. 56 in section 3.2.
Section 3.4.3, Adjustments of Prior Measurements	
Comment	One commentator suggested changing the last sentence in section 3.4.3 to state, “When adjusting obligations from a prior measurement date, the actuary should consider using revised assumptions to determine the obligations if appropriate for the purpose of the measurement.”
Response	The reviewers agree and modified the language in response to this comment.
Section 3.8, Assumptions	
Comment	One commentator suggested the term “assess” in section 3.8 should be clarified to determine whether the combined effect of assumptions significantly conflicts with what would be reasonable.
Response	The reviewers believe the guidance is sufficiently clear and made no change.
Section 3.9, Measuring the Value of Accrued or Vested Benefits	
Comment	One commentator recommended section 3.9(g)(3) (expenses associated with a potential plan termination, including transaction costs to liquidate plan assets) and (4) (changes in investment policy) be deleted, changed, or moved to section 3.3.
Response	The reviewers modified the guidance in section 3.9 in response to this comment.
Section 3.10, Market-Consistent Present Values	
Comment	One commentator suggested eliminating this section and stated that, if the concept is retained, it should be made clear that ABO and PBO under ASC 715 are likely not market consistent present values.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator suggested that if section 3.10 is retained, the portion permitting the reflection of payment default risk or the financial health of the sponsor should be eliminated.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator stated that in sections 3.10 and 3.11 it is not clear whether “benefits earned as of the valuation date” are the same thing as “accrued benefits” in section 3.9, Measuring the Value of Accrued or Vested Benefits. If so, the ASOP should use the same terminology in all three of these sections. If a distinction is intended, it should be made clear what the difference is.
Response	The reviewers clarified the guidance in section 3.9 in response to this comment.
Section 3.11, Low-Default-Risk Obligation Measure	
Comment	Several commentators suggested changing “...should calculate...” to “...should consider calculating...” in first paragraph of section 3.11.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Several commentators provided alternative language for the variable annuity plan language in section 3.11.
Response	The reviewers modified the guidance to read, “For purposes of this obligation measure, the actuary should consider reflecting the impact, if any, of investing plan assets in low-default-risk fixed income securities on the pattern of benefits expected to be paid in the future, such as in a variable annuity plan.”

ASOP No. 4—Doc. No. 205

Comment	One commentator felt the ASB should include an explanation about why and how including LDROM disclosure provides appropriate and useful information for the intended user for inclusion in all funding valuations.
Response	The reviewers believe the guidance is appropriate and note the transmittal memorandum of the ASOP states, "...this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."
Comment	One commentator stated it is not clear what "costs accrued" means in the context of section 3.11.
Response	The reviewers agree and clarified the guidance in response to this comment.
Comment	One commentator suggested modifying the language in the fourth paragraph of section 3.11 to state, "When plan provisions create pension obligations that are difficult to appropriately measure using traditional valuation procedures, such as benefits affected by actual investment returns, movements in a market index, or other similar factors, the actuary should consider using alternative valuation procedures such as those described under section 3.5.3, including the use of alternative discount rates if indicated by such procedures, to calculate the low-default-risk obligation measure of those benefits earned or costs accrued as of the measurement date."
Response	The reviewers disagree and made no change in response to this comment. The reviewers note modifications were made to the fifth paragraph as follows: "For purposes of this obligation measure, the actuary should consider reflecting the impact, if any, of investing plan assets in low-default-risk fixed income securities on the pattern of benefits expected to be paid in the future, such as in a variable annuity plan."
Section 3.14, Amortization Method	
Comment	One commentator felt section 3.14 should state that the actuary should "consider" the items listed, not that the actuary should necessarily "take them into account," as some of them may not be necessary or appropriate to take into account.
Response	The reviewers note that the guidance in section 3.14 states, "the actuary should take into account factors including, but not limited to, the following, if applicable." Therefore, the reviewers made no change.
Comment	One commentator suggested requiring that a reasonable actuarially determined contribution use an amortization method that is designed to fully amortize the unfunded actuarial liability.
Response	The reviewers believe the guidance is appropriate and made no change.
Section 3.17, Allocation Procedure	
Comment	One commentator felt section 3.17 should state that the actuary should "consider" the items listed, not that the actuary should necessarily "take them into account," as some of them may not be necessary or appropriate to take into account (e.g., relevant input from the principal, potentially intergenerational equity).
Response	The reviewers disagree and made no change.
Section 3.19, Implications of Contribution Allocation Procedure or Funding Policy	
Comment	One commentator felt the disclosure contemplated in section 3.19(b) should not be required as long as the contribution allocation procedure produces an expected contribution that exceeds normal cost plus interest on the unfunded.
Response	The reviewers believe the guidance is appropriate and made no change. The reviewers note that the guidance states, "For purposes of this section, the actuary may presume that all assumptions will be realized and the plan sponsor (or other contributing entity) will make contributions anticipated by the contribution allocation procedure or funding policy."

ASOP No. 4—Doc. No. 205

Comment	One commentator suggested alternative wording for paragraphs (b), (c), and (d) in section 3.19 to clarify that “contribution” refers to “plan’s expected future contributions.”
Response	The reviewers believe the guidance is appropriate and made no change. The reviewers note that the guidance states, “For purposes of this section, the actuary may presume that all assumptions will be realized and the plan sponsor (or other contributing entity) will make contributions anticipated by the contribution allocation procedure or funding policy.”
Section 3.21, Reasonable Actuarially Determined Contribution	
Comment	One commentator suggested alternative wording for 3.21(b).
Response	The reviewers agree and modified the language in response to this comment.
Comment	One commentator suggested section 3.21(b) should be clarified to allow an entry age normal cost calculation to use “the current plan of benefits for each participant,” for the purposes of determining a reasonable actuarially determined contribution.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Section 3.22, Gain and Loss Analysis	
Comment	In section 3.22, one commentator suggested replacing “single individual” with “limited group of individuals” to provide a more meaningful example.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Section 3.26, Documentation	
Comment	In section 3.26, one commentator felt that the sentence, “In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4” was unnecessary and should be deleted.
Response	The reviewers disagree and made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	Two commentators suggested adding ASOP No. 56 to the list of ASOPs in section 4.1.
Response	The reviewers note that guidance on ASOP No. 56 was added to section 3 and, therefore, was added to the list of ASOPs in section 4.1.
Comment	One commentator suggested inserting “significant” before “assumptions” in section 4.1(k).
Response	The reviewers agree and modified the language in response to this comment.
Comment	One commentator objected to the requirement in section 4.1(o)(1) that the rationale for the selection of the discount rate be disclosed.
Response	The reviewers believe the guidance is appropriate and made no change.
Comment	One commentator suggested that the disclosure requirement in section 4.1(o)(5) be deleted as it is entirely unclear what the ASB expects the actuary to disclose in response to this requirement.
Response	The reviewers disagree and made no change in response to this comment. The reviewers note that the guidance in section 3.11 states, “The actuary should use professional judgment to determine the appropriate commentary for the intended user.”
Comment	While one commentator appreciated the elimination of the second exposure draft’s section 4.1(v) from the third exposure draft, the commentator stated the associated additions to section 4.1(aa) were equally, and unnecessarily, burdensome.
Response	The reviewers disagree and made no change. The reviewers note section 4.1(aa) states that, “the disclosure may be brief but should be relevant to the plan’s circumstances.”



**Actuarial Standard
of Practice
No. 5**

Revised Edition

Incurred Health and Disability Claims

**Developed by the
Task Force to Revise ASOP No. 5 of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2017**

Doc. No. 186

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March 2017

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Incurred Health and Disability Claims

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 5

This document contains a final revision of ASOP No. 5, *Incurred Health and Disability Claims*.

Background

ASOP No. 5, then titled *Incurred Health Claim Liabilities*, was adopted in 1991. Under direction from the ASB and its Health Committee, a task force revised ASOP No. 5, retitled *Incurred Health and Disability Claims*, which was adopted in 2000 and updated for deviation language in 2011.

This revision of ASOP No. 5 reflects a number of changes to other standards that have been made since the 2000 revision, including updating the ASOP, where appropriate, to incorporate reference to new standards that have been issued since the 2000 revision, eliminate guidance that does not conform to current ASOP practices regarding references to other standards of practice, and make consistent the definitions used in the standard with those of other standards of practice. In addition, this revision of ASOP No. 5 has been updated to reflect relevant legal, regulatory, and practice developments that have occurred since the 2000 revision.

Exposure Draft

The exposure draft was released in December 2015 with a comment deadline of April 30, 2016. Eleven letters were received. The task force considered all comments received and made appropriate changes where needed. For a summary of the substantive issues contained in the comment letters on the exposure draft and the responses, please see appendix 2.

Key Changes

The most significant changes from the existing ASOP No. 5 are as follows:

1. revising certain definitions, and adding others for clarity and for consistency with other standards;
2. explicitly addressing certain considerations in estimating and analyzing incurred claims, including behavior of claimants, claim seasonality, credibility, payments and recoveries under government programs, and the purpose and intended use of the unpaid claim

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- estimate;
3. expanding the guidance regarding provider contractual arrangements;
 4. including, in section 3.4 regarding methods for estimating incurred claims, explicit discussion of projection methods as well as an updated discussion of other methods commonly in use;
 5. making the standard consistent with the revised guidance in ASOP No.1, *Introductory Actuarial Standard of Practice*, regarding use of the language “should consider”; and
 6. adding a requirement to disclose any explicit provision for adverse deviation.

The ASB voted in March 2017 to adopt this standard.

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Task Force to Revise ASOP No. 5

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 5

INCURRED HEALTH AND DISABILITY CLAIMS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries estimating or reviewing **incurred claims** when preparing or reviewing financial reports, claims studies, rates, or other actuarial communications as of a **valuation date** under a **health benefit plan**, as defined in section 2.7 of this standard.
- 1.2 **Scope**—This standard applies to actuaries who estimate or review **incurred claims** under **health benefit plans** on behalf of **risk-bearing entities**, such as managed-care entities, self-funded employer plans, health care **providers**, government-sponsored plans or risk contracts, or government agencies. This standard does not provide guidance to actuaries regarding reserves such as policy reserves, premium reserves, or claim settlement expense reserves, although such reserves may be required for financial reporting. This standard does not address interpretations of statutory or generally accepted accounting practices.

This standard applies to the actuary only with respect to **incurred claim** estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*). Actions taken by the actuary's principal regarding the use of such estimates are beyond the scope of this standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any actuarial work product covered by this standard's scope issued on or after September 1, 2017.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Block of Business**—All policies of a common coverage type (for example, major medical, preferred **provider** organization, or capitated managed care), demographic grouping (for example, size, age, or area), contract type, or other segmentation used in estimating **incurred claims** or used by a **risk-bearing entity** for evaluating its business.
- 2.2 **Capitation**—The amount of money paid to a **provider**, usually per covered member, to provide specific health care services under a **health benefit plan** regardless of the number or types of services actually rendered.
- 2.3 **Carve-Outs**—Contractually designated services provided by specific **providers**, such as prescription drugs or dental, or condition-specific services such as cancer, mental health, or substance abuse treatment. **Carve-outs** are often provided by a separate entity specializing in that type of designated service.
- 2.4 **Contract Period**—The time period for which a contract is effective.
- 2.5 **Development (or Lag) Method**—An estimation technique under which historical claim data, such as the number and amount of claims for the subject **block of business**, are grouped into the time periods in which claims were incurred and the time periods in which they were paid. The **development method** uses these groupings to create a claims payment pattern, which is used to help estimate the **incurred claims**.
- 2.6 **Exposure Unit**—A unit by which the cost for a **health benefit plan** is measured. For example, an **exposure unit** may be a contract, an individual covered, \$100 of weekly salary, or \$100 of monthly benefit.
- 2.7 **Health Benefit Plan**—A contract, such as an insurance policy, or other financial arrangement providing medical, prescription drug, dental, vision, disability income, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the **risk-bearing entity**.
- 2.8 **Incurral Date**—The date a claim became a liability of the **risk-bearing entity** in accordance with the terms of the **health benefit plan**. For **health benefit plans** where the claim must exceed a minimum threshold, for example, where there is a deductible or elimination period, the **incurral date** may be the date claims begin to accumulate toward the threshold.
- 2.9 **Incurred Claims**—For use in this ASOP, the value of all amounts paid or payable under a **health benefit plan**, determined to be a liability with an **incurral date** within the **contract period** or other appropriate period, as of the **valuation date**. It includes payments on all claims as of the **valuation date** plus a reasonable estimate of **unpaid claims liabilities** and, for certain coverages such as long-term care and long-term

disability, projection of future payments on reported claims. This definition is different than an alternate definition of **incurred claims** used for a **risk-bearing entity**'s income statements, for which **incurred claims** include payments on all claims between the prior **valuation date** and the current **valuation date** plus the estimate of **unpaid claims liabilities** as of the current **valuation date** less the estimate of **unpaid claims liabilities** as of the prior **valuation date**.

- 2.10 **Long-Term Product**—A **health benefit plan** that provides medical or disability benefits for an extended period of time. Some examples are cancer, long-term care, and long-term disability policies. The plan's benefits may not begin for several years after policy purchase and claims usually extend beyond the **valuation date**.
- 2.11 **Projection Method**—The application of an adjusted historical claim metric to an appropriate exposure base, in order to estimate **incurred claims**.
- 2.12 **Providers**—Individuals, groups, or organizations providing health care services or supplies, including but not limited to doctors, hospitals, independent physician associations, accountable care organizations, physical therapists, medical equipment suppliers, and pharmaceutical suppliers.
- 2.13 **Risk-Bearing Entity**—The entity with respect to which the actuary is estimating liabilities associated with **health benefit plans** or risk-sharing arrangements. Examples of risk-bearing entities include but are not limited to managed-care entities, insurance companies, health care **providers**, self-funded employer plans, government-sponsored plans or risk contracts.
- 2.14 **Tabular Method**—The seriatim application of factors to a volume measure (for example, number of individual claims) based on prior experience, in order to estimate **unpaid claims liabilities** for reported claims (commonly used for **long-term products**).
- 2.15 **Time Value of Money**—The principle that an amount of money available at an earlier point in time has different usefulness and value than the same amount of money has at a later point in time.
- 2.16 **Trends**—Measures of rates of change, over time, of the elements, such as cost, incidence, and severity, affecting the estimation of **incurred claims**.
- 2.17 **Unpaid Claims Liability**—The value of the unpaid portion of **incurred claims**, including unreported claims and reported but unpaid claims. For a **risk-bearing entity**'s balance sheet, the **unpaid claims liability** includes provision for all unpaid claims incurred during the current and prior periods.
- 2.18 **Valuation Date**—The date as of which the liabilities are estimated.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—The estimation of incurred health and disability claims is fundamental to the practice of health actuaries. It is necessary for the completion of financial statements, for the analysis and projection of **trends**, for the analysis or development of rates, and for the development of various management reports, regardless of the type of **risk-bearing entity**.
- 3.2 **Considerations for Estimating Incurred Claims**—The actuary should include items associated with the estimation that, in the actuary’s professional judgment, are applicable, material, and are reasonably foreseeable to the actuary at the time of estimation.

In determining which items to include in the estimation of **incurred claims**, the actuary should consider items including but not necessarily limited to those described below, and may rely on others as described in sections 3.6 and 3.7.

- 3.2.1 **Health Benefit Plan Provisions and Business Practices**—The actuary should consider the **health benefit plan** provisions and related business practices, including special group contract holder requirements and **provider** arrangements, which in the actuary’s judgment may materially affect the cost, frequency, and severity of claims. These include, for example, elimination periods, deductibles, preexisting conditions limitations, maximum allowances, and managed-care restrictions.

The actuary should make a reasonable effort to understand any changes in plan provisions or business practices made since the last estimate of **incurred claims**. The actuary should consider how such changes are likely to affect the estimation of claim costs and claim liabilities.

- 3.2.2 **Economic and Other External Influences**—The actuary should consider items such as changes in price levels, unemployment levels, medical practice, managed care contracts, cost shifting, **provider** fee schedule changes, medical procedures, epidemics or catastrophic events, and elective claims processed in recessionary periods or prior to contract termination.

- 3.2.3 **Behavior of Claimants**—The actuary should consider reasonably available information regarding claimant behavior, such as pent-up demand for new benefits, or impending benefit changes, which may impact **incurred claims**.

- 3.2.4 **Organizational Claims Administration**—The actuary should consider items that may affect claims administration practices, such as staffing levels, variable claim processing and investigation time (for example, for complicated claims or claims submitted on paper), computer system changes or downtime, seasonal backlogs of claims submitted, increased electronic submission of claims by **providers**, governmental influences, and cash flow considerations. The actuary should also be aware that the administration practices of external contracted parties (for

example, pharmacy benefit managers and third party administrators) can affect the **unpaid claims liability**. The actuary should make reasonable efforts to obtain information from appropriate personnel and evaluate whether there have been material changes in operational practices that impact the **incurred claim** estimate and, if so, make appropriate adjustments.

- 3.2.5 **Claim Seasonality**—The actuary should understand how seasonality may impact the estimation of **incurred claims** and make appropriate adjustments. Claim seasonality may be exhibited in the pattern of claims incurral and submission, or in the manner that costs actually emerge within the **health benefit plan** provisions, such as plans with high deductibles.
 - 3.2.6 **Credibility**—The actuary should consider how the credibility of the data affects the development of **incurred claim** estimates and refer to ASOP No. 25, *Credibility Procedures*, for further guidance.
 - 3.2.7 **Risk Characteristics and Organizational Practices by Block of Business**—The actuary should consider how marketing, underwriting, and other business practices can influence the types of risks accepted, and how the pattern of growth or contraction and relative maturity of a **block of business** can influence **incurred claims**.
 - 3.2.8 **Legislative Requirements**—The actuary should consider relevant legislative and regulatory changes as they pertain to the estimation of **incurred claims**. For example, governmental mandates can influence the provision of new benefits; risk characteristics; rating, reserving, and underwriting practices; methods used to estimate **incurred claims**; or claims processing practices.
 - 3.2.9 **Carve-Outs**—The actuary should consider the pertinent benefits, payment arrangements, and separate reporting of those benefits subject to **carve-outs** in **incurred claims** estimates.
 - 3.2.10 **Special Considerations for Long-Term Products**—The actuary should consider the variety of benefits available in **long-term products**, such as lump-sum, fixed, or variable payments for services; provisions such as cost of living adjustments and inflation protection; payment differences based on institutional or home-based care; social insurance integration; and the criteria for benefit eligibility.
- 3.3 **Analysis of Incurred Claims**—After reviewing the considerations in sections 3.2.1–3.2.10 above, the actuary should follow the relevant procedures highlighted in sections 3.3.1–3.3.6 below.
- 3.3.1 **Unpaid Claims Liability**—Using incurral and processing dates as appropriate, the actuary should estimate **unpaid claims liabilities** for claims incurred as of the **valuation date**.

- a. Purpose or Use of the Unpaid Claim Estimate—The actuary should identify the intended purpose or use of the unpaid claim estimate. Potential purposes or uses of unpaid claim estimates include, but are not limited to, establishing liability estimates for external financial reporting, internal management reporting, and various special purpose uses such as appraisal work and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider adjustments to accommodate the multiple purposes to the extent that, in the actuary’s professional judgment, it is appropriate and practical to make such adjustments.
- b. Plan Provisions—The actuary should review the relevant plan provisions to determine if they create obligations for services or payments after the **valuation date** (for example, medical benefits that extend beyond the **contract period**, or long-term disabilities). The actuary should determine if these obligations are part of the current or future period’s liability, or if these obligations make up a separate reserve.
- c. Data and Reporting—The actuary should consider the relevant reporting systems for processed claims, **exposure units**, and premium rates, and the various dating methods the systems use (for example, loss recognition, service rendered, reporting, or payment status). The actuary should use professional judgment in estimating the extent to which an adjustment to the reported data is needed, based on the dating methodology.
- d. Provision for Adverse Deviation—Recognizing that the estimation of liabilities for incurred but unpaid health and disability claims involves an estimate of the true obligations that will emerge, the actuary should consider what explicit provision for adverse deviation, if any, might be appropriately included. If a provision for adverse deviation is included, the **unpaid claims liability** should be appropriate, in the actuary’s judgment, for the intended use. For example, in certain situations, a provision for moderately adverse deviation may be appropriate. In other situations, the appropriate provision for adverse deviation may vary as the level of uncertainty varies, for example, based on credibility of the data or stability of payment patterns.
- e. Time Value of Money—The actuary should consider if the **time value of money** will have a material effect in the estimation of **incurred claims**. The use of any interest discounts depends on the purpose for which **incurred claims** are being estimated and should reflect any applicable accounting standards.
- f. Consistency of Assumptions and Methodology—The actuary should use assumptions and methodology consistent with those used for estimating

related liabilities and reserves, such as claim settlement expense reserves, unless it would be inappropriate to do so.

- 3.3.2 **Categories of Incurred Claims**—The actuary should consider separate estimation of **incurred claims** for each category that may exhibit different lag patterns, costs per **exposure unit, trends, or exposure unit** growth rates. If separate estimation is performed, the actuary should define categories of **incurred claims** in a manner that is appropriate to the available data and to estimation method(s) being used. Categories may be defined broadly, such as fee-for-service claims paid to health care **providers, capitation payments to providers**, or disability income paid to insureds. Categories might be further refined to more accurately analyze or project costs and utilization data, for example, by method of payment (such as electronic vs. manual), type of contract, type of service, geographic area, premium rating method, demographic factors, distribution method, and **provider** risk-sharing arrangements.
- 3.3.3 **Reinsurance Arrangements**—The actuary should consider the effect of reinsurance arrangements in estimating the **incurred claims**. In particular, the actuary should consider the effect of different lag patterns due to the extended reporting or recovery periods often associated with certain types of reinsurance.
- 3.3.4 **Large Claims**—The actuary should consider the effect of large claims, as defined by the actuary using professional judgment. Specifically, large claims can distort claim payment patterns or historical per-unit claim levels that the actuary considers when estimating **incurred claims**. The actuary should understand how large claims, if any, impact the particular method being employed to estimate **incurred claims** and make appropriate adjustments. For example, **incurred claim** estimates may be overstated if completion factors are applied to processed claims levels that include an unusually high number or amount of large claims.
- 3.3.5 **Coordination of Benefits (COB), Subrogation, and Government Programs**—The actuary should make a reasonable effort to understand the relevant organizational practices and regulatory requirements related to COB, subrogation, and government programs (state or federal). The actuary should consider how these items are reflected in the data (for example, negative claims or income) and make appropriate adjustments for COB, subrogation, and payments or recoveries resulting from government programs.
- 3.3.6 **Provider Contractual Arrangements**—The actuary should consider the relevant contractual arrangements with **providers** and any changes in such arrangements. These arrangements can affect **trends, claim cost levels, and claims processing**.

The actuary should consider any relevant variation in these arrangements by region or product, and any **provider** contractual arrangements that do not provide for reimbursement through the claim payment process. Some examples of these latter arrangements include the following:

- a. **capitation;**
- b. amounts initially withheld from **provider** payments, which may later become payable based upon contractually defined experience outcomes;
- c. reimbursement of services based on the expected cost for an episode of care, in which more services are at risk than would normally be the case for a given fee-for-service event;
- d. bonuses or other contractual incentive payments based on financial results or achievement of contractually defined quality metrics; and
- e. stop-loss contracts which limit the **provider's** risk for certain high cost, infrequent services.

The arrangements will typically specify what portion of the risk, if any, has been shifted to the **providers**. Under **provider** risk-bearing contracts, **provider** insolvency may result in reimbursement of claims on a fee-for-service basis. If **provider** insolvency may have a material effect on the **risk-bearing entity**'s ultimate liability, the actuary should disclose this risk. However, the actuary is not required to quantify the likelihood of **provider** insolvency. Depending on the purpose of the analysis, the actuary should consider any statutory limitations on the credits for such transfers of risk.

Certain contractual arrangements may also result in amounts due from **providers** (for example, risk sharing receivables, pharmacy rebates) based on financial results or other experience metrics. The actuary should consider the impact of unpaid medical costs resulting from failed **providers** bearing a material portion of the risk or losses incurred by **providers** deemed to be related parties.

3.4 **Methods Used for Estimating Incurred Claims**—Various methods may be used to estimate **incurred claims**. Some methods are based on statistical analysis and projection of the costs or rates at which claims were processed in recent periods.

Because no single method is necessarily better in all cases, the actuary should consider the use of more than one method to assess the reasonableness of results. The actuary should evaluate the method(s) chosen and the results obtained in light of the purpose, constraints, and scope of the assignment. The actuary should consider the reasonableness of the assumptions underlying each method used, and should consider the sensitivity of the **incurred claim** estimates to the use of reasonable alternative assumptions. The actuary should also consider the effect of **trends** both in previous periods and the current period for estimating **incurred claims**. The actuary should choose the outcome that, in the actuary's professional judgment, is the most reasonable provision for **incurred claims**, whether from a single method or a combination of several methods. Sections

3.4.1–3.4.3 below discuss some of the more common methods for estimating **incurred claims**.

3.4.1 **Development Method**—This method is appropriate and widely used for short-term benefits with claims subject to processing and payment (i.e. not **capitation**) and may also be appropriate for claims associated with **long-term products**.

The actuary should consider using metrics to assess the reasonableness of results for periods where historical development patterns are less credible. For example, the actuary might evaluate the ratio of estimated **incurred claims** to earned premiums or **exposure units** for reasonableness.

3.4.2 **Projection Methods**—**Projection methods** may be used to estimate **incurred claims** when the incidence of claims or volume of available data is limited or not sufficiently credible for other estimation methods, to supplement the **development method** for the most recent incurral months, or as a reasonableness check for other estimation methods. This method starts with the development of a historical claim metric (for example, cost per claim, cost per member per month, loss ratio) and then multiplies this value times the appropriate base for the period being estimated (for example, claim volume, member **exposure units**, earned premium, respectively.) The actuary may adjust the historical claim metric when appropriate, for example as a result of **trend**. The actuary may use utilization metrics (for example, authorized days per thousand members) to improve the projected cost levels for recent months, and to adjust for the impact of catastrophic claims. The actuary may also consider using risk adjustment techniques or other indicators such as pharmacy claims to help project shifts in the morbidity of the block.

3.4.3 **Tabular Method**—The **tabular method** is generally used for **long-term products** for which a reported claim event triggers an expected series of payments. This method applies factors to items such as individual claims, waived rates, or other volume measures based on previous experience in order to estimate the **unpaid claims liability** for known claims. The factors are based on items such as the age and gender of the insured, elimination period, cause of claim, length of disablement on the **valuation date**, and remaining benefit period, as appropriate to the coverage.

When using the **tabular method**, the actuary should take into account specified benefit changes throughout the lifetime of the claim and the assumptions used to develop the factors, and should select the appropriate factors to estimate the **unpaid claims liability** given the risk characteristics of the policy.

The actuary should recognize the specific impacts that recovery, mortality, and government offsets may have on tabular factors.

The **tabular method** is not appropriate by itself for estimating unreported claims.

When the **tabular method** is used, the actuary should consider whether an additional adjustment is necessary to reflect unreported **incurred claims**.

Greater availability of data and advances in computing power have resulted in alternative approaches that the actuary may consider to estimate **incurred claims**. These include (but are not necessarily limited to) regression, time series, and other statistical and econometric models, as well as different approaches to categorizing and aggregating data (for example, summarizing by weekly data cells or estimating the cost of reported claims separately from incurred but not reported claims.)

- 3.5 **Follow-Up Studies**—The actuary may conduct follow-up studies that involve performing tests of reasonableness of the prior period asset or liability estimates and the methods used over time. When conducting such follow-up studies, the actuary should, to the extent practicable, do the following:
- a. acquire the data to perform such studies;
 - b. perform studies in the aggregate or for pertinent blocks of business; and
 - c. utilize the results, if appropriate, in estimating **incurred claims**.
- 3.6 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.7 **Reliance on Assumptions and Methods Selected by Others**—When relying on assumptions and methods selected by others, the actuary should refer to ASOP No. 41 for guidance.
- 3.8 **Documentation**—The actuary should document the methods, assumptions, procedures, and the sources of the data used. The documentation should be in a form such that another actuary qualified in the same field could assess the reasonableness of the work.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the **incurred claim** estimate and refer to ASOP No. 41 for further guidance. The actuary should include the following items, as applicable, in an actuarial communication. This list includes certain pertinent items from ASOP No. 41 as well as additional items.
- a. important dates used in the analysis such as the incurral, processing, and **valuation dates**;
 - b. significant limitations, if any, that constrained the actuary's **incurred claim**

estimate analysis such that, in the actuary’s professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result;

- c. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the **incurred claim** estimate;
- d. any explicit provision for adverse deviation, as described in section 3.3.1;
- e. the risk that **provider** insolvency may have a material effect on the **risk-bearing entity**’s ultimate liability (see section 3.3.6);
- f. any follow-up studies the actuary may have utilized in the development of the **incurred claim** estimate, as described in section 3.5; and
- g. when updating a previous estimate, changes in assumptions, procedures, methods, or models that the actuary believes to have a material impact on the **incurred claim** estimate, as well as the reasons for such changes to the extent known by the actuary. The actuary may need to disclose these changes in cases other than when updating a previous estimate, consistent with the purpose or use of the **incurred claim** estimate. This standard does not require the actuary to measure or quantify the impact of such changes.

4.2 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law;
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

The estimation of incurred claims is an integral, fundamental part of the work of most health actuaries. It is necessary to set proper financial statements for ratemaking, planning, and projections. Incurred claims are part of the estimation of unpaid claim liabilities for financial reporting purposes. Incurred claims are often the starting point for premium rate development. The incurred claims from a period are adjusted to project the incurred claims for a future period.

The estimation of incurred claims has become more challenging with the proliferation of provider contracts that share risk in different ways. Having accurate data continues to be an issue.

Current Practices

Practices differ among actuaries and among types of coverage. The tabular, development, projection, and other approaches to evaluating incurred claims, as described in the standard, are representative of the range of current practices.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 5, *Incurred Health and Disability Claims*, was issued in December 2015 with a comment deadline of April 30, 2016. Eleven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The task force carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” includes the task force, Health Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

TRANSMITTAL MEMORANDUM	
Question 1: Is it appropriate to change the language in the first sentence of section 3.2 from “should consider” to “should include”?	
Comment	Several commentators supported the change, while several other commentators stated that the use of “should include” is inconsistent with the use of “should consider” in the remainder of the section.
Response	The reviewers changed “should include” to “should consider” and added language to clarify the meaning.
Question 2: Is the guidance in section 3.3.6 on “provider contractual arrangements” too detailed?	
Comment	One commentator considered certain provider payments discussed in this standard to be “non-claim benefit expenses” instead of “claims” and recommended changing the name of the ASOP accordingly. Another commentator believed that the discussion of example provider arrangements is more detail than is necessary. The majority of commentators agreed that the level of detail is appropriate.
Response	The reviewers believe that the payments referenced are consistent with the definition of “incurred claims” in the standard and made no change.
Question 3: Is the required disclosure on “provider insolvency risk,” as discussed in section 3.3.6, appropriate?	
Comment	Several commentators agreed that the required disclosure is appropriate.
Comment	One commentator suggested that this disclosure is unnecessary because it would result in ubiquitous disclosure.
Response	The reviewers believe the standard of materiality would apply in this situation and made no change.

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Comment	Two commentators suggested that the actuary is not required to assess the likelihood of provider insolvency.
Response	The reviewers agree and added clarifying language.
Question 4: Which common methods, if any, are appropriate to include in section 3.4?	
Comment	Most commentators agreed that the list of common methods is appropriate.
Comment	One commentator suggested that the following sentence be deleted: “Because no single method is necessarily better in all cases, the actuary should consider the use of more than one method.”
Response	The reviewers believe this sentence sets appropriate context and made no change.
Comment	One commentator suggested including the loss ratio method.
Response	The reviewers believe this is covered by the discussion of projection methods and made no change.
Question 5: Are the methods included in section 3.4 described in appropriate detail?	
Comment	Several commentators believe the level of detail is appropriate.
Comment	One commentator suggested changes to the discussion of projecting incurred claims by category of service.
Response	The reviewers agree and deleted this language because it is already discussed in section 3.3.2.
Comment	One commentator suggested clarifying the definition of “long-term claim.”
Response	The reviewers agree and made corresponding changes.
Comment	One commentator suggested that long-term disability should not be mentioned without also mentioning long-term care.
Response	The reviewers agree and made corresponding changes.
Comment	One commentator suggested that the reference to evaluating ratios in section 3.4.1 is too specific.
Response	The reviewers added language clarifying that this guidance is appropriate considering the particular drawbacks of the development method.
Comment	One commentator suggested focusing on reasonability of results in the discussion of the development method.
Response	The reviewers agree and made corresponding changes.
Comment	One commentator suggested that the methods used for estimating incurred claims should be defined in section 3 instead of in section 2.
Response	The reviewers believe it is appropriate to include these definitions in section 2 and made no change.
Comment	One commentator suggested using a more specific description of the development method.
Response	The reviewers clarified that the development method is used to estimate incurred claims rather than the unprocessed portion of incurred claims.
Comment	One commentator suggested removing language in section 3.4.1 that is redundant because it is discussed in detail in section 3.2.
Response	The reviewers agree and removed the language.

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Comment	One commentator suggested moving language regarding morbidity shifts from section 3.4.3 to section 3.2.
Response	The reviewers believe this language is appropriately specific to the projection method and made no change.
Comment	One commentator suggested moving section 3.4.3, Projection Methods, immediately after section 3.4.1, Development Method, because they are related.
Response	The reviewers agree and made this change.

Question 6: Is the requirement to disclose explicit provision for adverse deviation (PAD), as discussed in section 4.1, appropriate?

Comment	One commentator said the disclosure is not appropriate and several commentators said the disclosure is appropriate.
Response	The reviewers believe the required disclosure is appropriate and did not change the requirement.
Comment	One commentator questioned the motivation for changing language from “moderately adverse margin for uncertainty” to “provision for adverse deviation.”
Response	The reviewers retained the “provision for adverse deviation” language and revised this section to include a discussion of “moderately adverse” deviation.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Section 1.2, Scope

Comment	One commentator suggested identifying “principal” as coming from ASOP No. 41, <i>Actuarial Communications</i> , and as defined in the <i>Code of Professional Conduct</i> .
Response	The reviewers believe the context makes this reference clear and made no change.
Comment	One commentator suggested adding “self-funded employer plans” to the list of risk-bearing entities in section 1.2.
Response	The reviewers agree and made the change.
Comment	One commentator suggested removing “regulatory agencies” from the list of risk-bearing entities in section 1.2.
Response	The reviewers changed this item to “government agencies” in order to clarify the meaning.
Comment	One commentator suggested moving the list of risk-bearing entities to the definition section.
Response	The reviewers believe the list is appropriately included in section 1.2.
Comment	One commentator suggested removing the words “insured or non-insured” in section 1.2.
Response	The reviewers agree and made the change.

SECTION 2. DEFINITIONS

Section 2.3, Carve-Outs

Comment	One commentator suggested moving the definition of “carve-outs” to section 3.2.9.
Response	The reviewers believe the definition is appropriately included in section 2.3 and made no change.

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Comment	One commentator suggested that the definition of “carve-outs” implies that dental services are always a carve-out.
Response	The reviewers added the word “contractually” to clarify that carve-outs are defined in the contract and not globally.
Section 2.7, Health Benefit Plan	
Comment	One commentator suggested including “insurance policy” in the definition of “health benefit plan” because policies are referred to later on.
Response	The reviewers agree and made the change.
Section 2.8, Incurred Claims (now section 2.9)	
Comment	Two commentators suggested clarifying the difference between incurred claims in the two definitions discussed.
Response	The reviewers agree and made clarifying changes.
Comment	One commentator was concerned that the definition of “incurred claims” could be interpreted not to apply to the unpaid claim liabilities booked for balance sheet and income statement purposes.
Response	The reviewers agree and made clarifying changes to the definition.
Section 2.11, Providers (now section 2.12)	
Comment	Two commentators suggested using the language “including but not limited to.”
Response	The reviewers agree and made the change.
Comment	One commentator suggested expanding the list of individuals, groups, or organizations.
Response	The reviewers agree and added two more examples.
Section 2.13, Tabular Method (now section 2.14)	
Comment	One commentator suggested clarifying the definition by adding the word “seriatim.”
Response	The reviewers agree and made the change.
Comment	One commentator suggested clarifying the meaning of “long-term claims.”
Response	The reviewers agree and added examples.
Section 2.14, Time Value of Money (now section 2.15)	
Comment	One commentator suggested changing “different...than” to “different...from.”
Response	The reviewers believe the current language is clearer and made no change.
Section 2.15, Trends (now section 2.16)	
Comment	One commentator suggested being more specific about the “elements” affecting incurred claims.
Response	The reviewers agree and added examples.
Section 2.16, Unpaid Claims Liability(now section 2.17)	
Comment	One commentator suggested adding a fourth category for future benefits paid on a claim.
Response	The reviewers agree that this category should be included and added it to the definition of “incurred claims” in section 2.9.

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Comment	One commentator requested clarification of the meaning of “appropriate period.”
Response	The reviewers agree this would be helpful and made clarifying changes.
Comment	One commentator observed a conflict related to “processed claims” and “paid claims” between the definitions of the “development method” and “unpaid claims liability.”
Response	The reviewers agree and made changes to both definitions in this section and section 2.5.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, Considerations for Estimating Incurred Claims	
Comment	One commentator suggested changing “management” to “principal.”
Response	The reviewers agree that reliable sources of information extend beyond management and changed “management” to “another party.”
Section 3.2.1, Health Benefit Plan Provisions and Business Practices	
Comment	One commentator suggested clarifying the relationship between “plan provisions” and “business practices.”
Response	The reviewers agree and made a clarifying change by adding the word “related.”
Comment	One commentator suggested adding “benefit periods” and “lifetime maximums” to the list.
Response	The reviewers believed these items are generically covered by “maximum allowances” and did not include them.
Comment	One commentator suggested that a high standard is being set for the actuary regarding identifying differences between business practices and plan provisions.
Response	The reviewers removed the language related to identifying differences between business practices and plan provisions, and clarified that “reasonable effort” is the appropriate standard to apply to the understanding of changes in business practices.
Section 3.2.3, Behavior of Claimants	
Comment	One commentator suggested recognizing the difference between observed behavior and assumed behavior.
Response	The reviewers believe this distinction is covered by “reasonably available information” and made no change.
Section 3.2.4, Organizational Claims Administration	
Comment	One commentator suggested changing “electronic submission of claims” to “method of claims submission.”
Response	The reviewers believe the specific example is appropriate and made no change.
Section 3.2.8, Legislative Requirements	
Comment	One commentator suggested adding “for example” to the beginning of this list.
Response	The reviewers agree and made the change.
Comment	One commentator suggested referring to developing regulatory provisions regarding estimation of incurred claims for certain long-term products.
Response	The reviewers note, as described in section 1.2, that this standard does not address interpretation of statutory or generally accepted accounting principles, and added “methods used to estimate incurred claims” to the list of example influences of government mandates.

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Section 3.2.10, Special Considerations for Long-Term Products	
Comment	Several commentators suggested reversing the order of the sentences in this section.
Response	The reviewers agree and made the change.
Section 3.3.1, Unpaid Claims Liability	
Comment	One commentator suggested removing “purpose or use of the unpaid claim estimate” from the list.
Response	The reviewers believe the current discussion is appropriate and did not make this change because different estimates may be appropriate depending on the intended use.
Comment	One commentator suggested adding “as appropriate” after “using incurred and processing dates.”
Response	The reviewers agree this improves clarity and made the change.
Section 3.3.1(f), Consistency of Bases (now titled “Consistency of Assumptions and Methodology”)	
Comment	One commentator suggesting adding a caveat to address situations when, for example, a consulting actuary’s review is limited to the unpaid claims liabilities reserve.
Response	The reviewers believe the use of consistent assumptions and methodology are also appropriate in this situation and made no change.
Comment	One commentator suggested clarifying the meaning of “bases” and “related liabilities and reserves.”
Response	To improve clarity of meaning, the reviewers changed consistent basis to consistent assumptions and methodology, and included the example of claim settlement expense reserves.
Section 3.3.2, Categories of Incurred Claims	
Comment	Several commentators suggested adding detail specific to certain estimation methods, for example considerations regarding categories of incurred claims that would be specific to the development method.
Response	The reviewers note that this section is intentionally broad because of the variety of estimation methods in use, and made changes intended to clarify this point.
Section 3.3.4, Large Claims	
Comment	One commentator suggested noting that large claims could result in an understatement.
Response	The reviewers believe overstatement is an appropriate example in this context and did not make this change.
Comment	One commentator suggested defining large claims.
Response	The reviewers added language to clarify that large plans are “as defined by the actuary using professional judgment.”
Section 3.3.5, Coordination of Benefits (COB), Subrogation, and Government Programs	
Comment	One commentator noted that section 3.2.1 uses “reasonable effort.”
Response	The reviewers agree that there is not intended to be a difference in the meaning and added “reasonable effort.”
Section 3.3.6, Provider Contractual Arrangements	
Comment	Two commentators requested clarity on the definitions of “material” and “disclosure.”

ASOP No. 5—Doc. No. 186

Response	The reviewers note that materiality is defined in ASOP No. 1, <i>Introductory Standard of Practice</i> , and that section 4 of this standard refers to disclosure in an actuarial communication.
Section 3.4, Methods Used for Estimating Incurred Claims	
Comment	One commentator expressed concern that this section does not address developing regulatory provisions (for statutory reporting) regarding estimation of incurred claims for certain long-term products.
Response	The reviewers note, as described in section 1.2, that this standard does not address interpretation of statutory or generally accepted accounting principles, and believes that the description of the tabular method is broad enough to include required adjustments, such as required use of company experience.
Section 3.4.2, Tabular Method (now section 3.4.3)	
Comment	One commentator suggested adding “benefit periods or lifetime maximums” to the list of factors.
Response	The reviewers added language to clarify that this list is not intended to be exhaustive.
Comment	One commentator noted that “long-term disability” is mentioned, but not “long-term care,” although they are similar.
Response	The reviewers agree and removed this language.
Comment	One commentator suggested noting that the tabular method is not appropriate “by itself” for estimating unreported claims.
Response	The reviewers agree and made the change.
Comment	One commentator suggested using “reported/unreported” instead of “known/unknown.”
Response	The reviewers agree and made the change.
Section 3.4.3, Projection Method (now section 3.4.2)	
Comment	One commentator questioned the inclusion of the specific example of pharmacy claims.
Response	The reviewers believe it is common practice to rely on pharmacy claims because, for example, they are believed to complete more quickly than other claims, and they are an indicator of morbidity. The reviewers made no change.
Section 3.5, Follow-Up Studies	
Comment	One commentator questioned the removal of the requirement to perform testing of the reserve methodology.
Response	The reviewers believe the language removed was educational only, and does not impact any obligation to perform follow-up studies that may exist.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	In subsection (a), one commentator suggested referring to a range of incurral and processing dates.
Response	The reviewers believe the current language is adequate and would include date ranges.
Comment	One commentator suggested combining the disclosure items regarding variation of actual results compared to estimates (c) and risk of provider insolvency (f).
Response	The reviewers believe these are distinct types of risks and made no change.
Comment	In section (d), one commentator requested clarification of the need for documentation of follow-up studies.

ASOP No. 5—Doc. No. 186

Response	The reviewers changed the wording of this item to improve clarity.
Section 4.2, Changes in Assumptions, Procedures, Methods, or Models (now section 4.1(g))	
Comment	One commentator suggested defining “material impact.”
Response	The reviewers note that materiality is defined in ASOP No. 1 and made no change.
Comment	One commentator suggested changing the structure of the sentences in this paragraph to improve clarity.
Response	The reviewers agree, moved the section into 4.1(g), and made clarifying changes.



**Actuarial Standard
of Practice
No. 6**

Revised Edition

**Measuring Retiree Group Benefits Obligations and Determining
Retiree Group Benefits Program Periodic Costs or Actuarially
Determined Contributions**

**Developed by the
Retiree Group Benefits Subcommittee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
May 2014**

Doc. No. 177

T A B L E O F C O N T E N T S

Transmittal Memorandum

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May 2014

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 6

This document contains the final version of a revision of ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*.

Background

The ASB provides coordinated guidance for measuring pension and retiree group benefit obligations through the series of ASOPs listed below.

1. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*;
2. ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*;
3. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
4. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*; and
5. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

Although the titles of ASOP Nos. 27, 35, and 44 reference Pension Obligations or Valuations, they are also applicable to Retiree Group Benefits Obligations or Valuations. Additional guidance is also provided in other standards, including ASOP No. 5, *Incurred Health and Disability Claims*, and ASOP No. 25, *Credibility Procedures*.

First Exposure Draft

The first exposure draft of this ASOP was issued in April 2012 with a comment deadline of July 15, 2012. Eighteen comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was issued in March 2013 with a comment deadline of August 30, 2013. The Retiree Group Benefits Subcommittee carefully considered the thirteen comment letters received. Key changes made to the final standard in response to comment letters received on the second exposure draft include the following:

1. Additional guidance was provided on retiree group benefits programs participating in pooled health plans, including situations when it may be appropriate to use the pooled health plan's premium without regard to adjustments for age.
2. Language in sections 4.1(s) and 4.1(t) was clarified to state that related disclosures are not required for funded status measurements performed in accordance with or prescribed by federal law or regulation.
3. Section 4.4 regarding confidential information was added to remove potential confusion regarding the interrelationship of this standard and Precept 9 of the *Code of Professional Conduct*.

In addition, a number of other changes were made to the text. Please see appendix 2 for a detailed discussion of the comments received and the reviewers' responses.

Key Changes from Current Standard

Key changes from the version of ASOP No. 6 adopted December 2001 (and updated May 2011 for standard deviation language) include the following:

Disclosure of Funded Status

Sections 4.1(s) and 4.1(t) contain new disclosure requirements related to a retiree group benefits program's funded status if the program's funded status is disclosed.

Disclosure of Information, Analysis, and Rationale for Changes in Assumptions and Methods

Sections 4.1(i) and 4.1(x) contain new disclosure requirements for changes in the assumptions and methods.

Disclosure of Rationale for Changes in Cost or Contribution Allocation Procedure

Section 4.1(y) contains new disclosure requirements for a change in the cost or contribution allocation procedure.

Assessment of Contribution Allocation Procedure or Funding Policy

Sections 4.1(o) and 4.1(p) contain new disclosure requirements related to the implications of the contribution allocation procedure or plan sponsor's funding policy on future expected plan contributions, funded status, and ability to make benefit payments when due.

Prescribed Assumptions or Methods

The standard has been revised to address prescribed assumptions or methods set by another party or set by law (sections 2.33 and 2.34).

Pooled Health Plans (including Community Rated Plans)

Additional guidance is provided concerning retiree group benefits programs that participate in a pooled health plan.

Trend Rates

Additional guidance is provided concerning the setting of trend rates, particularly regarding the factors an actuary should consider in setting the ultimate trend rate and the select period.

Acceptance, Lapse, and Re-Enrollment Rates

More guidance is provided on the selection of acceptance, lapse, and re-enrollment rates.

Guidance on Medicare Benefits

Actuaries providing services in this area need to determine which participants are covered by Medicare and which are not. In addition, Medicare now provides prescription drug subsidies to some retiree plans. The standard was revised to provide guidance in both areas.

Dedicated Assets

The language regarding dedicated assets has been modified to clarify that, when legal or accounting requirements don't conflict, dedicated assets may include assets such as earmarked book reserves or Rabbi Trusts that are not part of an irrevocable trust.

Coordination with ASOP No. 4

The standard has been revised so that consistent guidance is provided in ASOP Nos. 4 and 6 in areas that are common to both pension and retiree group benefits.

ASOP No. 6 is intended to accommodate the concepts of financial economics as well as traditional actuarial practice.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The Pension Committee thanks former committee member Gordon C. Enderle for his assistance with drafting this ASOP.

The ASB voted in May 2014 to adopt this standard.

ASOP No. 6—May 2014

Retiree Group Benefits Subcommittee

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 6

MEASURING RETIREE GROUP BENEFITS OBLIGATIONS AND DETERMINING RETIREE GROUP BENEFITS PROGRAM COSTS OR ACTUARILLY DETERMINED CONTRIBUTIONS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to measuring obligations under a **retiree group benefits program** and determining **periodic costs** or **actuarially determined contributions** for such **retiree group benefits programs**. This standard provides guidance on assumptions that are specific to **retiree group benefits programs**. In addition, it addresses broader measurement issues, **cost allocation procedures**, and **contribution allocation procedures**. This standard provides guidance for coordinating and integrating all of the elements of an **actuarial valuation** of a **retiree group benefits program**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to the following tasks in connection with a **retiree group benefits program**:
- a. measurement of obligations. Examples include determinations of **funded status**, assessments of solvency upon **retiree group benefits program** termination, market measurements, and measurements for use in pricing benefit provisions;
 - b. assignment of the value of **retiree group benefits program** obligations to time periods. Examples include **actuarially determined contributions**, **periodic costs**, and **actuarially determined contribution** or **periodic cost** estimates for potential **retiree group benefits program** changes;
 - c. development of a **cost allocation procedure** used to determine **periodic costs** for a **retiree group benefits program**;
 - d. development of a **contribution allocation procedure** used to determine **actuarially determined contributions** for a **retiree group benefits program**;
 - e. determination as to the types and levels of benefits supportable by specified **periodic cost** or **actuarially determined contribution** levels; and
 - f. projection of **retiree group benefits** obligations, **retiree group benefits program periodic costs** or **actuarially determined contributions**, and other

related measurements. Examples include cash flow projections and projections of a **retiree group benefits program's funded status**.

Throughout this standard, any reference to selecting actuarial assumptions, **actuarial cost methods**, asset valuation methods, and **amortization methods** also includes giving advice on selecting actuarial assumptions, **actuarial cost methods**, asset valuation methods, and **amortization methods**. In addition, any reference to developing or modifying a **cost allocation procedure** or **contribution allocation procedure** includes giving advice on developing or modifying a **cost allocation procedure** or **contribution allocation procedure**.

This standard highlights health and death benefits because they are the most common forms of **retiree group benefits**. This standard applies to situations involving other types of **retiree group benefits** but does not apply to measurements of pension obligations or social insurance programs.

This standard does not require the actuary to evaluate the ability of the **plan sponsor** or other contributing entity to make **actuarially determined contributions** for the **retiree group benefits program** when due.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial work product with a **measurement date** on or after March 31, 2015; however, if roll-forward techniques are used in the measurement, the standard is not effective until three years after the last full measurement before March 31, 2015. Earlier adoption of this standard is permitted.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Accrued Liability**—The portion of the **actuarial present value of projected benefits** (and **expenses**, if applicable), as determined under a particular **actuarial cost method**, that is not provided for by future **normal costs**. Under certain **actuarial cost methods**, the **actuarial accrued liability** is dependent upon the actuarial value of assets.

- 2.2 **Actuarial Cost Method**—A procedure for allocating the **actuarial present value of projected benefits** (and **expenses**, if applicable) to time periods, usually in the form of a **normal cost** and an **actuarial accrued liability**. For purposes of this standard, a pay-as-you-go method is not considered to be an **actuarial cost method**.
- 2.3 **Actuarially Determined Contribution**—A potential payment, other than by a retired **participant**, to prefund the **retiree group benefits program**, as determined by the actuary using a **contribution allocation procedure**. It may or may not be the amount actually paid by the **plan sponsor** or other contributing entity. This does not include the development of **premiums** or budget rates.
- 2.4 **Actuarial Present Value**—The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions with regard to future events, observations of market or other valuation data, or a combination of assumptions and observations.
- 2.5 **Actuarial Present Value of Projected Benefits**—The **actuarial present value** of benefits that are expected to be paid in the future, taking into account the effect of such items as future service, advancement in age, and expected future per capita health care costs (sometimes referred to as the “present value of future benefits”).
- 2.6 **Actuarial Valuation**—The measurement of relevant **retiree group benefits** obligations and, when applicable, the determination of **periodic costs** or **actuarially determined contributions**.
- 2.7 **Adverse Selection**—Actions taken by one party using risk characteristics or other information known to or suspected by that party that cause a financial disadvantage to the **retiree group benefits program** (sometimes referred to as antiselection).
- 2.8 **Amortization Method**—A method under a **contribution allocation procedure** or **cost allocation procedure** for determining the amount, timing, and pattern of recognition of the unfunded **actuarial accrued liability**.
- 2.9 **Benefit Options**—Choices that a **benefit plan member** may make under a **benefit plan** including basic coverages (for example, choice of medical plans) and additional coverages (for example, contributory dental coverage).
- 2.10 **Benefit Plan**—An arrangement providing medical, prescription drug, dental, vision, legal, death, long-term care, or other benefits (excluding retirement income benefits) to **participants of the retiree group benefits program**, whether on a reimbursement, indemnity, or service benefit basis.
- 2.11 **Benefit Plan Member**—An individual covered by a **benefit plan**.
- 2.12 **Contribution Allocation Procedure**—A procedure that uses an **actuarial cost method**, and may include an asset valuation method, an **amortization method**, and an **output**

smoothing method, to determine the **actuarially determined contribution** for prefunding a **retiree group benefits program**. It may produce a single value, such as **normal cost** plus an amortization payment of the unfunded **actuarial accrued liability**, or a range of values. This term does not relate to the process of determining the **participant contribution**.

- 2.13 **Cost Allocation Procedure**—A procedure that uses an **actuarial cost method**, and may include an asset valuation method and an **amortization method**, to determine the **periodic cost** for a **retiree group benefits program** (for example, the procedure to determine the net periodic postretirement benefit cost under some accounting standards).
- 2.14 **Covered Population**—Active and retired **participants**, participating **dependents**, and **surviving dependents of participants** who are eligible for benefit coverage under a **retiree group benefits program**. The **covered population** may also include contingent **participants**.
- 2.15 **Dedicated Assets**—Assets designated for the exclusive purpose of satisfying the **retiree group benefits program** obligations. Examples include the following:
- a. life insurance policies held by the **plan sponsor** to cover some of the **plan sponsor's** retired **participant** death benefits;
 - b. welfare benefit trusts (for example, voluntary employees' beneficiary associations);
 - c. Internal Revenue Code section 401(h) accounts in a qualified pension plan; and
 - d. Internal Revenue Code section 115 trusts sponsored by governmental entities for **retiree group benefits**.
- 2.16 **Dependents**—Individuals who are covered or may become covered under a **retiree group benefits program** by virtue of their relationship to an active or retired **participant**.
- 2.17 **Expenses**—Administrative or investment expenses borne or expected to be borne by the **benefit plan** or **retiree group benefits program**.
- 2.18 **Funded Status**—Any comparison of a particular measure of plan assets to a particular measure of plan liabilities.
- 2.19 **Immediate Gain Actuarial Cost Method**—An **actuarial cost method** under which actuarial gains and losses are included as part of the unfunded **actuarial accrued liability** of the **retiree group benefits program**, rather than as part of the **normal cost** of the **retiree group benefits program**.
- 2.20 **Market-Consistent Present Value**—An **actuarial present value** that is estimated to be consistent with the price at which benefits that are expected to be paid in the future would

trade in an open market between a knowledgeable seller and a knowledgeable buyer. The existence of a deep and liquid market for **retiree group benefits program** cash flows or for entire **retiree group benefits programs** is not a prerequisite for this present value measurement.

- 2.21 **Measurement Date**—The date as of which the values of the **retiree group benefits** obligation and, if applicable, the assets are determined (sometimes referred to as the “valuation date”).
- 2.22 **Measurement Period**—The period subsequent to the **measurement date** during which the chosen assumptions or other model components will apply. The period often ends at the time the last **participant** is expected to receive the final benefit.
- 2.23 **Medicare Integration**—The approach to determining the portion of a Medicare-eligible claim that is paid by the **benefit plan** after adjustment for Medicare reimbursements for the same claim. Types of **Medicare integration** include the following:
 - a. Full Coordination of Benefits (Full COB)—The health plan pays the difference between total eligible charges and the Medicare reimbursement amount, or the amount it would have paid in the absence of Medicare, if less.
 - b. Exclusion—The health plan applies its normal reimbursement formula to the amount remaining after Medicare reimbursements have been deducted from total eligible charges.
 - c. Carve-Out—The health plan applies its normal reimbursement formula to the total eligible charges, and then subtracts the amount of Medicare reimbursement.
- 2.24 **Normal Cost**—The portion of the **actuarial present value of projected benefits** (and **expenses**, if applicable) that is allocated to a period, typically twelve months, under the **actuarial cost method**. Under certain **actuarial cost methods**, the **normal cost** is dependent upon the actuarial value of assets.
- 2.25 **Normative Database**—Data compiled from sources that are expected to be typical of the **retiree group benefits program**, rather than from plan-specific experience. Examples of **normative databases** include published mortality and disability tables, proprietary **premium** manuals, and experience on similar **retiree group benefits programs**.
- 2.26 **Output Smoothing Method**—A method used by the actuary to adjust the results of a **contribution allocation procedure** to reduce volatility.
- 2.27 **Participant**—An individual who (a) is currently receiving benefit coverage under a **retiree group benefits program**, (b) is reasonably expected to receive benefit coverage under a **retiree group benefits program** upon satisfying its eligibility and participation requirements, or (c) is a **dependent** of an individual described in (a) or (b).

- 2.28 **Participant Contributions**—Payments made by a **participant** to a **retiree group benefits program**.
- 2.29 **Periodic Cost**—The amount assigned to a period using a **cost allocation procedure** for purposes other than funding. This may be a function of plan obligations, **normal cost**, **expenses**, and assets. In many situations, **periodic cost** is determined for accounting purposes.
- 2.30 **Plan Sponsor**—An organization that establishes or maintains a **retiree group benefits program**. Examples of **plan sponsors** include employers and Taft-Hartley Boards of Trustees.
- 2.31 **Pooled Health Plan**—A health **benefit plan** in which **premiums** are based at least in part on the claims experience of groups other than the group being valued. The use of projection assumptions that are not based solely on the claims experience of the group being valued (for example, the health care cost **trend** rate assumption) would not by itself create a **pooled health plan**.
- 2.32 **Premium**—The price charged by a risk-bearing entity, such as an insurance or managed care company, to provide risk coverage.
- 2.33 **Prescribed Assumption or Method Set by Another Party**—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards gives the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method set by a governmental entity for a **retiree group benefits program** that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is deemed to be a **prescribed assumption or method set by another party**.
- 2.34 **Prescribed Assumption or Method Set by Law**—A specific assumption or method that is mandated or that is selected from a specified range or set of assumptions or methods that is deemed to be acceptable by applicable law (statutes, regulations, and other legally binding authority). For this purpose, an assumption or method set by a governmental entity for a **retiree group benefits program**, which such governmental entity or a political subdivision of that entity directly or indirectly sponsors, is not deemed to be a **prescribed assumption or method set by law**.
- 2.35 **Retiree Group Benefits**—Medical, prescription drug, dental, vision, legal, death, long-term care, or other benefits (excluding retirement income benefits) that are provided during retirement to a group of individuals, on account of an employment relationship.
- 2.36 **Retiree Group Benefits Program**—The program specifying **retiree group benefits**, including eligibility requirements, **participant contributions**, and the design of the benefits being provided.

- 2.37 **Spread Gain Actuarial Cost Method**—An **actuarial cost method** under which actuarial gains and losses are included as part of the current and future **normal costs** of the **retiree group benefits program**.
- 2.38 **Stop-Loss Coverage**—Insurance protection providing reimbursement of all or a portion of claims in excess of a stated amount. **Stop-loss coverage** may be either individual or aggregate (sometimes referred to as excess loss coverage).
- 2.39 **Surviving Dependent**—A **dependent** who qualifies as a **participant** under the **retiree group benefits program** following the death of the associated **participant**.
- 2.40 **Trend**—A measure of the rate of change, over time, of the per capita benefit payments.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—Measuring **retiree group benefits** obligations and determining **periodic costs** or **actuarially determined contributions** are processes in which the actuary may be required to make judgments or recommendations on the choice of actuarial assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods**.

The actuary may have the responsibility and authority to select some or all actuarial assumptions, **actuarial cost methods**, asset valuation methods, **amortization methods**, and **output smoothing methods**. In other circumstances, the actuary may be asked to advise the individuals who have that responsibility and authority. In yet other circumstances, the actuary may perform actuarial calculations using **prescribed assumptions or methods set by another party** or **prescribed assumptions or methods set by law**.

Other actuarial standards of practice provide guidance on asset valuation methods (ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*), and actuarial assumptions and procedures not specifically addressed in this standard (for example, ASOP No. 5, *Incurred Health and Disability Claims*; ASOP No. 25, *Credibility Procedures*; ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*; and ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*).

ASOP No. 6 addresses broader measurement issues including **cost allocation procedures** and **contribution allocation procedures**, and provides guidance for coordinating and integrating all of these elements of an **actuarial valuation** of a **retiree group benefits program**. In the event of a conflict between the guidance provided in ASOP No. 6 and the guidance in any of the aforementioned ASOPs, ASOP No. 6 governs.

3.2 **General Procedures**—When measuring **retiree group benefits** obligations and determining **retiree group benefits program periodic costs or actuarially determined contributions**, the actuary should perform the following general procedures:

- a. identify the purpose of the measurement (section 3.3);
- b. identify the **measurement date** (section 3.4);
- c. develop a model that reasonably represents the following:
 1. known provisions of the **retiree group benefits program** as they currently exist and as they are anticipated to change in the **measurement period**, as appropriate for the purpose (section 3.5);
 2. the current population covered by the benefits in question, as appropriate for the purpose (section 3.6); and
 3. current benefit costs (sections 3.7 and 3.8).
- d. evaluate the quality and consistency of data used in construction of the model, and make appropriate adjustments (section 3.9);
- e. identify any significant administrative inconsistencies and make appropriate adjustments in the model or disclose the unresolved inconsistency (section 3.10);
- f. obtain from the principal other information necessary for the purpose of the measurement (section 3.11);
- g. select actuarial assumptions (section 3.12);
- h. evaluate **retiree group benefits** assets (section 3.13);
- i. consider how to measure accrued or vested benefits, if applicable (section 3.14);
- j. consider how to measure **market-consistent present values**, if applicable (section 3.15);
- k. reflect how **retiree group benefits program** or **plan sponsor** assets as of the **measurement date** are reported, if applicable (section 3.16);
- l. select an **actuarial cost method**, if applicable (section 3.17);
- m. select a **cost allocation procedure** or **contribution allocation procedure**, if applicable (section 3.18);

- n. assess the implication of the **contribution allocation procedure** or **plan sponsor's funding policy**, if applicable (section 3.18);
- o. consider the use of approximations and estimates (section 3.19);
- p. consider the sources of significant volatility, if applicable (section 3.20);
- q. review and test the results of the calculations for reasonableness (section 3.21); and
- r. evaluate **prescribed assumptions and methods set by another party**, if applicable (section 3.22).

3.3 **Purpose of Measurement**—When measuring **retiree group benefits obligations** and determining **retiree group benefits program periodic costs** or **actuarially determined contributions**, the actuary should reflect the purpose of the measurement. Examples of measurement purposes are **periodic costs**, **actuarially determined contribution requirements**, benefit provision pricing, comparability assessments, **retiree group benefits program settlement**, **funded status** assessments, market value assessments, and **plan sponsor** mergers and acquisitions.

- 3.3.1 **Projection or Point-in-Time**—The actuary should consider whether assumptions or methods need to change for measurements projected into the future compared to point-in-time measurements.
- 3.3.2 **Uncertainty or Risk**—In conjunction with the related guidance in ASOP No. 41, the actuary should consider the uncertainty or risk inherent in the measurement assumptions and methods and how the actuary's measurement treats such uncertainty or risk.

3.4 **Measurement Date Considerations**—When measuring **retiree group benefits obligations** and determining **retiree group benefits program periodic costs** or **actuarially determined contributions** as of a **measurement date**, the actuary should address the following:

- 3.4.1 **Information as of a Different Date**—The actuary may estimate asset and **participant** information at the **measurement date** on the basis of information as of a different date. In these circumstances, the actuary should make appropriate adjustments to the data. Alternatively, the actuary may calculate the obligations as of a different date and then adjust the obligations to the **measurement date** (see section 3.24 for additional guidance). In either case, the actuary should determine that any such adjustments are reasonable in the actuary's professional judgment, given the purpose of the measurement.
- 3.4.2 **Events after the Measurement Date**—Events known to the actuary that occur subsequent to the **measurement date** and prior to the date of the actuarial

communication may, but need not, be reflected in the measurement unless the purpose of the measurement requires the inclusion of such events.

3.5 **Modeling Provisions of Retiree Group Benefits Programs**—In modeling the known provisions of the **retiree group benefits program**, the actuary should give appropriate consideration to the written plan documents, historical practices, administrative practices, governmental programs, communications to participants, and, depending on the purpose of the measurement, **plan sponsor** decisions and expected future **benefit plan** designs, as described in sections 3.5.1 and 3.5.2 below.

3.5.1 **Components of the Modeled Retiree Group Benefits Program**—The actuary should incorporate the significant elements of the known provisions of the **retiree group benefits program** into the model. Factors that the actuary should consider include:

- a. **Covered Benefits**—Covered benefits may include reimbursements for covered services, fixed-dollar payments for covered events (such as death benefits), and other monetary benefits (such as Medicare **premiums** or defined dollar benefits).
- b. **Eligibility Conditions**—All relevant eligibility conditions should be considered. These include, but are not limited to, conditions related to age, service, date of hire, employment classification, and participation in other benefit programs, such as Medicare or a pension plan.
- c. **Plan Benefit Limitations, Exclusions, and Cost-Sharing Provisions**—Benefit limitations and exclusions (such as an annual or lifetime maximum benefit in a medical plan) may affect plan payments, and such effects will change over time. The actuary should also consider participant cost-sharing provisions (such as deductibles, copayments, coinsurance, and out-of-pocket limits).
- d. **Participant Contributions**—Many **retiree group benefits programs** require contributions from **participants** as a condition for their continued eligibility for coverage. The actuary should reflect the **participant contributions** in the model, as discussed below. In addition, **participant contributions** may affect participation rates and **adverse selection**, thus affecting per capita claim costs.
 1. **Participant Postretirement Contribution Formula**—In modeling the **retiree group benefits program**, the actuary should reflect the actual level of **participant contributions**. There is a wide variation in how **participant contributions** are determined (examples include flat amounts, amounts based on credited service at retirement, amounts based on claims costs for retired

- participants**, and amounts based on combined costs for all **participants**).
2. Participant Postretirement Contribution Reasonableness—The actuary should compare for reasonableness the stated basis for **participant contributions** to what has been implemented. See section 3.10, Administrative Inconsistencies, for further guidance.
 3. Preretirement Active Employee Contributions—A **retiree group benefits program** may require active employees to make preretirement contributions in order to earn eligibility for **retiree group benefits**. The actuary should consider how this requirement may affect future benefit eligibility and **plan sponsor periodic costs or actuarially determined contributions**.
 4. Participant Contributions as Defined by Limits on Plan Sponsor Payments—Some **retiree group benefits programs** designate a maximum average per capita amount to be paid by the plan sponsor in a year. This limit is commonly known as a “cap.” These maximums may be based on factors such as service, employment classification, or age at retirement. The actuary should consider whether any such limits will have a significant impact on the obligation. The actuary should consider how the **plan sponsor** is expected to implement these limits, when these limits are expected to be reached, their impact on **participant contributions**, and, thus, future participation, and, if appropriate, incorporate these limits into the modeled **retiree group benefits program**.
- e. Payments from Other Sources—The cost of coverage in some **retiree group benefits programs** is partially or completely funded with payments from other sources such as retiree medical savings accounts, terminal leave balances, or non-employer funding sources. The actuary should consider payments from other sources when measuring a **retiree group benefits program’s obligations**.
 - f. Health Care Delivery System Attributes—The actuary should consider that various health care delivery system attributes can affect costs differently.
 - g. Benefit Options—The actuary should consider the effect of **benefit options**.
 - h. Anticipated Future Changes—For most measurement purposes, the actuary should reflect only changes that have been communicated to plan **participants**, changes that result from the continuation of a historical pattern, or changes that are required by law to be implemented within a

specified period. However, depending upon the purpose of the measurement, the actuary may reflect future changes that the **plan sponsor** has requested the actuary to evaluate. The actuary should disclose that such an approach has been used (see section 4.1(d)).

3.5.2 Historical Practices—When appropriate, the actuary should consider historical practices in developing the model. Historical practices include the following:

- a. **Claims Payment Practices**—If the actuary becomes aware of a significant inconsistency between administrative practice and plan documents, stated **plan sponsor** policies, **participant** communications, or applicable law (statutes, regulations, and other legally binding authority), the actuary should follow the guidance in section 3.10.
- b. **Patterns of Plan Changes**—The actuary should consider the **plan sponsor's** historical practices or patterns of regular changes in the **retiree group benefits program** (such as benefits, cost-sharing, and **participant contribution** levels). Depending on the purpose of the measurement, the continuation of such past practices or patterns may warrant inclusion in the model. The actuary should consider whether a maximum average per capita amount to be paid by the **plan sponsor** in a year would be effective in light of historical practices such as past increases in the maximum.
- c. **Governmental Programs**—The actuary should consider any patterns in the historically enacted legislative and administrative policy changes in Medicare and other governmental programs to the extent that the **retiree group benefits program** integrates with them.

3.5.3 Reviewing the Modeled Retiree Group Benefits Program—The actuary should consider whether the model continues to reflect actual known provisions and practices of the **retiree group benefits program**. If its administration has significantly deviated from the **retiree group benefits program** as modeled, the actuary should consider whether this deviation is temporary or should be treated as a permanent change in the **retiree group benefits program**. If the actuary becomes aware of a significant inconsistency between administrative practice and plan documents, stated **plan sponsor** policies, **participant** communications, or applicable law (statutes, regulations, and other legally binding authority), the actuary should follow the guidance in section 3.10.

3.5.4 Measurement Results by Category—The actuary should consider whether the measurement results need to be examined by category (for example, medical vs. dental; union vs. nonunion; retiree vs. **dependent**; **retiree group benefits program** paid vs. **participant** paid; and payments before Medicare eligibility age vs. payments after Medicare eligibility age). This examination may be necessary as a result of the nature of the assignment or to assess the reasonableness of the measurement model.

- 3.6 Modeling the Covered Population—The projected size and demographic composition of the **covered population** has a significant impact on the measurement. The actuary should consider the need to model variations in the **covered population** (for example, when benefit eligibility varies by type of coverage). Open group measurements should be used when appropriate for the purpose of the measurement. These issues are discussed below.
- 3.6.1 Census Data—The actuary should collect sufficient census data to make a reasonable estimate of the obligation. The actuary may use individual census data or grouped data, as appropriate for the measurement. Data for retirees or other former employees who decline and terminate coverage may be needed to establish participation assumptions, including election of coverage at retirement, lapse, and re-enrollment rates.
- 3.6.2 Employees Currently Not Accruing Benefits—Depending on the purpose of the measurement, the actuary should consider whether some or all of the employees currently not accruing service toward **retiree group benefits** eligibility may accrue service in the future and whether some or all of the employees currently not making required preretirement **participant contributions** may contribute in the future, and make appropriate allowance for them in the modeled population.
- 3.6.3 Contingent Participants—The actuary should examine the census data and take appropriate measures to reflect individuals who are not current **participants**, but may reasonably be expected to become **participants** through their future actions. For example, the actuary may need to make a re-enrollment assumption in situations where retirees or other former employees have opted out of medical coverage at retirement or termination, but may later elect to resume or begin coverage.
- 3.6.4 Dependents and Surviving Dependents of Participants—The actuary should include in the modeled population **dependents** and **surviving dependents** who are eligible for coverage and participating. In doing so, the actuary should take into account that the **retiree group benefits program**'s eligibility conditions and benefit levels for **dependents** and **surviving dependents** may differ from the plan's eligibility conditions and benefit levels for retired **participants**. Benefit coverage for the **dependent** of a retired **participant** may continue subject to that **dependent** contributing to the plan, may continue for a limited period (for example, until Medicare eligibility, one year after the death of the retired **participant**, or a limiting age), or may cease when the retired **participant** dies.

The actuary should generally model **dependents** (other than dependent children) separately from retired **participants** because of differences in the timing of Medicare eligibility and in mortality between the retired **participant** and the **dependent**. For dependent children (including disabled adult dependent children), the actuary should consider whether the obligation related to dependent children is significant and model them appropriately. For example, for **retiree group**

benefits programs that have liberal early retirement eligibility conditions, dependent children coverage can significantly increase the overall number of **participants** and, therefore, have a significant effect on the size of the **covered population**.

3.6.5 **Appropriateness of Pension Plan Data**—**Plan sponsors** that do not maintain separate **retiree group benefits program** databases may furnish pension plan data to represent the **covered population** of the **retiree group benefits program**. In such cases, the actuary should make appropriate adjustments. Examples of the types of adjustments that may be required are discussed below.

- a. Retirees Covered by the Retiree Group Benefits Program but Not Receiving Pension Benefits—Former employees may be **participants** in the **retiree group benefits program**, but may no longer be participants in the pension plan (such as employees who received lump-sum pension payments). **Dependents** and **surviving dependents** of retired **participants** may be eligible for the **retiree group benefits program**, but may not be in the pension plan census data.
- b. Retirees Receiving Pension Benefits but Not Covered by the Retiree Group Benefits Program—Retirees may be participants in the pension plan, but may not be covered by the **retiree group benefits program** (such as employees who terminated with vested pension benefits now in payment status). Employees may be eligible for pension benefits upon retirement or disability, but may not satisfy the eligibility conditions of the **retiree group benefits program** or may have waived coverage for certain or all of the underlying **retiree group benefits**.
- c. Provisions Affecting Certain Employees—The pension plan may be frozen for a certain group of employees or may exclude employees due to age or service eligibility requirements, which might not affect their eligibility for the **retiree group benefits program**.

3.6.6 **Use of Grouping**—The actuary may use grouping techniques for modeling the population when, in the actuary's judgment, grouping is not expected to significantly affect the measurement results. One such technique is to group **participants** based on common demographic characteristics (for example, age and service), where the obligation for each **participant** in the group is expected to be similar for commonly grouped individuals.

Another technique is to group health plans with similar expected costs and features. A **retiree group benefits program** with multiple health plan designs (for example, through various collective bargaining agreements) may not require separate measurement for each individual health plan. Under such circumstances, the actuary, after evaluating the eligibility conditions and range of benefits provided, may decide it is appropriate to combine health plans that have similar

expected costs and group the **covered populations** of those health plans. The actuary should disclose such combining of health plans and grouping of populations (see section 4.1(i)).

3.6.7 **Hypothetical Data**—When appropriate, the actuary may prepare measurements based on assumed demographic characteristics of current or future plan **participants**.

3.7 **Modeling Initial Per Capita Health Care Costs**—The actuary should develop assumed per capita health care costs to be the basis of the initial annual benefit costs for estimating the future health care obligations. In the actuarial development of health care costs, health plan experience is generally considered the best predictor of future claims experience, preferable to sole reliance on **normative databases** or other measures. Therefore, preferred methods involve development of annual per capita health care costs from the claims experience of the health plan when that experience is sufficiently credible. In the absence of credible health plan experience data, the actuary may use other methods (such as methods that use **premiums** and **normative databases**) to develop the per capita costs.

The process of setting the per capita health care costs generally involves (a) quantifying aggregate claims costs; (b) quantifying a measure of exposure to risk, usually the count of individuals who were eligible for the health plan during the period the claims were incurred; and (c) applying other information such as **normative databases** and **premium** as appropriate.

Multiple initial per capita health care costs may be appropriate due to the modeling of known health plan and **participant contribution** provisions (section 3.5), demographic factors influencing claims, and claims experience (for example, different rates by gender, healthy vs. disabled, retired **participants** vs. **dependents**).

The actuary should document the methods and procedures followed in developing the initial per capita health care costs, such that another actuary qualified in this practice area could assess the reasonableness of the initial per capita health care costs. The actuary should also document any significant actuarial judgments applied during the modeling process.

The sections that follow address aspects of setting the per capita health care costs that are particularly important when projecting benefit costs for a long period. The actuary should consider the following elements.

3.7.1 **Net Aggregate Claims Data**—In most cases, the actuary's objective is the development of a net incurred claims rate. The actuary should, however, consider the factors involved in distinguishing net claims from gross claims and incurred claims from paid claims, as discussed below.

- a. Paid Claims—Aggregate claims data received by the actuary will usually be grouped by the dates of payment, not by the dates on which claims were incurred. The actuary should consider analyzing the data for the likely difference between the level of paid claims for a period and the level of incurred claims for the same period. When the differences are significant, the actuary should make an adjustment, either to the historical paid claims or to the initial claims assumption, to account for the likely future level of claims activity.
 - b. Gross Claim Components—Aggregate claims data received by the actuary may show only net payments or may include cost-sharing components (such as deductibles and copayments), reimbursements, costs not covered, or other elements of gross claims. The actuary may determine the initial claims rate assumption from the net payments or the gross amounts.
- 3.7.2 **Exposure Data**—In developing an initial per capita health care cost, the actuary should obtain exposure data for the same time periods and population as the claims experience data that will be used. Since exposure data are historical in nature, the exposure data typically will be different from the census data used in modeling the future **covered population**. If the differences are significant, the actuary should review the data sets for consistency (see section 3.9).
- Segmenting the exposure data by age and gender or by retired **participant** vs. **dependent** may be appropriate. The actuary should either obtain information to segment the population or employ reasonable assumptions as appropriate.
- 3.7.3 **Use of Multiple Claims Experience Periods**—The actuary should consider the use of multiple claims experience periods and adjust the experience of the various periods to comparable bases as described in sections 3.7.8, 3.7.9, 3.7.10, and 3.7.11. When combining multiple experience periods, the actuary should consider the applicability of each period based upon elapsed time and changes required to adjust to comparable bases.
- The actuary may consider smoothing the results to account for historical irregularities. The actuary may weight the experience periods as appropriate.
- 3.7.4 **Credibility**—When data are not available or fully credible, the actuary should make use of relevant **normative databases** or active plan experience on the same group adjusted for age and expected differences in such items as utilization and plan design. The actuary may use these supplementary data and professional judgment to validate, adjust, or replace the plan experience data.
- ASOP No. 25, *Credibility Procedures*, provides guidance to the actuary when assigning credibility to sets of experience data.

3.7.5 **Use of Premiums**—Although an analysis of the actual claims experience is preferable when reasonably possible, the actuary may use **premiums** as the basis for initial per capita costs, with appropriate analysis and adjustment for the **premium** basis. The actuary who uses **premiums** for this purpose should adjust them for changes in benefit levels, **covered population**, or **retiree group benefits program** administration. The actuary should also make the appropriate adjustments to determine the age-specific costs (see section 3.7.7).

If **premiums**, adjusted or unadjusted, are used as the basis for initial per capita costs in the measurement, the actuary should make an appropriate disclosure and consider the factors described in other paragraphs of section 3.7.

3.7.6 **Impact of Medicare and Other Offsets**—When Medicare is the primary payer and has a significant impact on the per capita health care costs, the actuary should develop separate costs for Medicare-eligible participants. Such costs should reflect the **Medicare integration** approach for the **benefit plan** or how the **benefit plan** supplements Medicare. The actuary should consider using separate per capita health care costs for **benefit plan** members who are not or will not become eligible for Medicare due to exemptions, such as for certain governmental entities. The actuary should consider the proportions of retired **participants** and their **dependents** that may be eligible for Part A and not for Part B due to non-payment of the Part B premium.

The actuary should consider whether there is a significant inconsistency between the **Medicare integration** approach being applied by the claims administrator and representations to the actuary of the terms of the health plan. See section 3.10 for further guidance.

Depending on the purpose of the measurement, the actuary should consider whether it is appropriate to reflect reimbursements or other payments from the Medicare system (for example, the retiree drug subsidies for **plan sponsors** and direct subsidies for Part D plans).

The actuary should consider changes to Medicare and other governmental programs that may have affected historical data being used in the measurement and, if the impact is significant, make appropriate adjustments.

The actuary should also adjust for other offsets, such as workers' compensation and auto insurance, if their impact is considered to be significant.

3.7.7 **Age-Specific Costs**—Various factors influence the magnitude of costs for the group being valued, often including the ages, gender, and other characteristics of the **benefit plan** members. Considerations for reflecting these factors in modeling initial per capita health care costs are discussed below.

- a. **General Principles**—In general, for health coverage, benefit costs vary by age. Therefore, except as noted in (c) below, the actuary should use age-specific costs in the development of the initial per capita costs and in the projection of future **benefit plan** costs. In general, the development of the age-specific costs should be based on the demographics of the group being valued and the group’s total expected claims or premiums. Any age ranges used should not be overly broad. The relationship between the costs at various ages is an actuarial assumption that may be based on **normative databases**.

Additional analysis may be needed in some circumstances. For example, if the **benefit plan** comingles the experience of active and retired individuals, and the **benefit plan’s premium** for non-Medicare retirees does not reflect their full age-specific cost, the **benefit plan’s** active rates include an implicit subsidy for the non-Medicare retirees. The actuary should reflect the full age-specific costs, including the implicit subsidy.

- b. **Pooled Health Plans (including Community Rated Plans)**—If the group being valued participates in a **pooled health plan**, additional analysis relating to age-specific costs may be needed. Except as noted in (c), the actuary should reflect the full age-specific cost, including the implicit subsidy, regardless of the size of the group being valued.

A **pooled health plan** may base its **premiums** for participating groups, in whole or in part, on the claims, demographics, or other risk factors of the total population of the **pooled health plan**. To the extent the **premiums** are based on the demographics of the total population of the **pooled health plan**, and not adjusted by the demographics of the group under consideration, the actuary performing a **retiree group benefits actuarial valuation** for a group should use age-specific costs based upon the **pooled health plan’s** total age distribution and the **pooled health plan’s** total expected claims costs or **premiums** rather than based on the group’s own age distribution and its own expected claims costs or **premiums**. If, however, the **premiums** are explicitly based, in part, on the composition of the group under consideration, the actuary should take into account the distribution of the considered group’s members by age, or by age and gender, to the extent appropriate.

The actuary should base the age-specific costs for the group being valued on a distribution table for the total number of covered health plan members by age, or by age and gender, provided by the **pooled health plan**. If the information is not available from the **pooled health plan**, then the actuary may make a reasonable assumption regarding the distribution table for the **pooled health plan** to determine the age-specific cost. Alternatively, the actuary may base the age-specific cost on manual rates or other sources relevant to the plan of benefits covering the members of the group being valued.

- c. **Possible Exceptions**—In some very limited cases, the use of the **pooled health plan's premium** may be appropriate without regard to adjustments for age. The factors that an actuary should evaluate in determining whether the **premium** may be appropriate without regard to adjustments for age include:
1. the purpose of the measurement (for example, for a projection of short-term cash flow needs the use of the **premium** may be appropriate);
 2. whether for the type of **benefit plan** being valued (for example, certain dental plans) the impact of using age-specific costs would not be material;
 3. the extent to which there are no age-related implicit subsidies between actives and retirees that occur within the **pooled health plan**; and
 4. whether the **pooled health plan** and its **premium** structure are sustainable over the **measurement period**, even if other groups or active **participants** cease to participate. The use of a **premium** without regard to adjustment for age is generally inappropriate if the **pooled health plan** and its **premium** structure are not sustainable over the **measurement period** if other groups or active **participants** cease to participate.
- 3.7.8 **Adjustment for Benefit Plan Design Changes**—The actuary should adjust the claims costs to reflect significant differences, if any, between the **benefit plan** designs in effect for the experience period and those in effect during the initial year of the **measurement period**. Where significant, the impact of changes in other provisions of the **retiree group benefits program** (for example, **participant contributions**) should be reflected.
- 3.7.9 **Adjustment for Administrative Practices**—Changes in administrative practices affect how costs emerge. The actuary should make appropriate provisions in the model for changes in administrative practices such as the following:
- a. **Claims Adjudication**—The actuary should consider how overall costs and utilization rates may be influenced by the method by which enrollees and providers submit claims (for example, provider electronic submission vs. enrollee paper submission of claims).
 - b. **Enrollment Practices**—The actuary should consider the effect enrollment practices (for example, the ability of **participants** to drop in and out of a health plan) have had on health care costs.

- 3.7.10 **Adjustment for Large Individual Claims**—The actuary should recognize the significance that large claims may have with respect to claims experience and consider whether adjustments are appropriate. When data are relevant and available, the actuary should review the frequency and size of large claims and consider whether the prevalence of large claims is expected to be significantly different in the future. Future periods may have a higher or lower incidence of such claims than past experience periods under examination. The actuary should consider whether adjustments should be made to reflect annual or lifetime maximums. The actuary should review both **stop-loss coverage** and other large claims, as described below:
- a. Stop-Loss Coverage—The actuary should consider the financial impact of stop-loss insurance in all projections.
 - b. Other Large Claims—The actuary should also consider large claims that may be below the **stop-loss coverage** level.
- 3.7.11 **Adjustment for Trend**—When adjusting the claims experience during earlier periods to the initial year of the measurement, the actuary should reflect the effect of **trend** that has occurred between those earlier claim periods and the initial year of the measurement. These adjustments of the initial per capita health care cost may reflect experience from outside the health plan.
- The actuary should consider using separate **trend** rates for major cost components (for example, medical, drugs, and health plan administration).
- 3.7.12 **Adjustment When Plan Sponsor is Also a Provider**—The **plan sponsor** may also be a provider under the plan, as in cases where the **plan sponsor** is a hospital, medical office, clinic, or other health care provider. In these situations, the **plan sponsor** pays itself, in effect, for services it provides its own members. Therefore, the actuary should analyze the charges incurred and reimbursements received by such **plan sponsor**, and make appropriate adjustments in the measurement model to properly reflect the underlying transactions.
- 3.7.13 **Use of Other Modeling Techniques**—Health care costs may be modeled and projected using techniques other than those mentioned above. When using an alternative approach, the actuary should disclose the method used and comment on its applicability (see section 4.1(l)). Examples of alternative approaches include models that project a distribution of expected claims with an associated probability distribution and models that assign different claims costs for the last year of life.
- 3.7.14 **Administrative and Other Expenses**—In addition to the cost of claims, the **plan sponsor** is usually responsible for the cost of administering the **retiree group benefits program** and other related **expenses**. The actuary should consider these

expenses when performing the measurement. The actuary may model **expenses** in various ways. For example, **expenses** may be included in claims costs or expressed on a per capita basis, as a percentage of claims, or as fixed amounts.

- 3.8 **Modeling the Cost of Death Benefits**—Death benefits may be provided directly by the **plan sponsor** upon the death of a retired **participant** or may be paid by an insurance company through a life insurance program. The life insurance program may be either participating or nonparticipating with respect to policy dividends. The actuary should appropriately reflect the financial arrangement through which the benefits are provided, including dividends, **participant contributions**, carrier administrative **expenses**, and risk charges.

When selecting assumptions and measurement methods regarding death benefits, the actuary should consider that the actual cost of life insurance varies by age, but the insurance rates paid by the **plan sponsor** may not. The actuary should reflect appropriate costs by age in the projection model.

- 3.9 **Model Consistency and Data Quality**—The actuary should review the modeled plan provisions of the **retiree group benefits program**, **covered population**, per capita health care costs, and death benefit costs as a whole to evaluate their consistency. ASOP No. 23, *Data Quality*, provides guidance on selecting and reviewing data and making appropriate disclosures regarding the data. The actuary should also take the following steps when reviewing the data:

3.9.1 **Coverage and Classification Data**—The actuary should consider the importance of coverage distinctions (such as HMO vs. PPO) and classification distinctions (such as hourly vs. salaried, or benefits that vary among different groups of retired **participants**) that result in variations in the benefit availability among **participants**. The actuary should consider whether such differences are significant enough to require further refinement of the model. The actuary should document the coverage and classification distinctions incorporated in the model.

3.9.2 **Consistency**—If the actuary finds data elements that appear to be significantly inconsistent with known plan provisions of the **retiree group benefits program**, other data elements, or data used for prior measurements, the actuary should take appropriate steps to address such apparent inconsistencies as discussed below. To the extent that significant inconsistencies cannot be reconciled, the actuary should disclose them (see section 4.1(v)).

- a. **Retiree Group Benefits Program Operations**—If the actuary becomes aware of a significant inconsistency between administrative practice and plan documents, stated **plan sponsor** policies, **participant** communications, or applicable law (statutes, regulations, and other legally binding authority), the actuary should follow the guidance in section 3.10.

- b. Medicare-Related Data—The actuary should make and document appropriate adjustments if data concerning Medicare eligibility and age are determined to be inaccurately or inconsistently coded for either claims or **covered population**.
 - c. Demographic Distinctions—The actuary should consider demographic breakdowns (such as age, gender, geography, and hourly/salaried classifications), which may reveal results that are inconsistent with prior data or the actuary’s prior expectations.
- 3.9.3 **Sources of Data**—The actuary should consider the various types and sources of data available for the **covered population**, for the coverage and classification of **participants**, and for benefit costs, as discussed below:
- a. Census Data—In most cases, the actuary will be supplied with eligibility and demographic information about **participants** in the **retiree group benefits program**. A **participant** census used for underwriting or pension purposes may contain useful information about the **covered population**. The actuary should determine whether these sources represent **retiree group benefits program** participation with sufficient accuracy (see sections 3.6.5 and 3.7.2) and, if not, seek more accurate census information. The actuary should review coverage and classification information for **dependents** and **surviving dependents** because of the impact they may have on the results of the measurement.
 - b. Claims Payment Data—Various sources of data are available for establishing per capita costs, including **normative databases** and experience data specific to the **benefit plan**. The actuary should review plan experience relative to normative ranges of value but also recognize the legitimacy of the **benefit plan** experience, to the extent it is credible, and the limitations of applying normative data to an unrelated situation. ASOP No. 25 provides guidance in the assignment of credibility values to data.
 - c. Data Quality at Each Level of Usage—Data that may be of appropriate quality for determination of certain assumptions within a model may not be of appropriate quality for determination of other assumptions. When data are combined or separated, the actuary should review the data for suitability for the purpose. For example, data from a **benefit plan** may be sufficient for setting an aggregate per capita health care cost but not be of sufficient size to set per capita health care costs by location.
- 3.10 **Administrative Inconsistencies**—In general, the actuary may rely on the **plan sponsor’s** representations. However, in the course of performing the measurement, the actuary may become aware of a significant inconsistency between administrative practice and plan documents, stated **plan sponsor** policies, **participant** communications, or applicable law

(statutes, regulations, and other legally binding authority). Examples of areas of possible inconsistencies include: **participant contribution** determinations that combine claims for active and retired **participants** resulting in “hidden” subsidies (see section 3.5.1(d)(2)); claims payment practices including ignoring lifetime limits (see section 3.5.2(a)); **Medicare integration** (see section 3.7.6); and **retiree group benefits program** operations (see section 3.9.2(a)). The actuary should do the following upon becoming aware of such an inconsistency:

- a. discuss the inconsistency with the **plan sponsor**, the administrator, or any other appropriate parties;
- b. adjust the model appropriately, consistent with the purposes of the measurement;
- c. document the resulting steps taken by the actuary in developing the model; and
- d. disclose any significant unresolved inconsistency (see section 4.1(v)).

3.11 **Other Information from the Principal**—The actuary should obtain from the principal other information, such as accounting policies or funding elections, necessary for the purpose of the measurement.

3.12 **Projection Assumptions**—In selecting projection assumptions, the actuary should consider the following:

3.12.1 **Economic Assumptions**—The actuary should comply with the guidance contained in ASOP No. 27 when selecting economic assumptions not covered by this ASOP to be used in measuring **retiree group benefits** obligations. In applying ASOP No. 27, the actuary should take into account the purpose of the measurement, and the differences between the characteristics of **retiree group benefits** obligations and the characteristics of pension benefit obligations. For example, the discount rate selected for measuring pension benefit obligations for purposes of ASC 715-30 Defined Benefit Plans – Pension may not be appropriate for measuring **retiree group benefits** obligations for the purposes of ASC 715-60, because the payment patterns may be different.

The actuary should determine what other economic assumptions are needed, including the following when relevant to the calculation:

- a. **Health Care Cost Trend Rates**—Health care cost **trend** rates reflect the change in per capita health costs over time due to factors such as inflation, medical inflation, utilization, technology improvements, definition of covered charges, leveraging caused by health plan design features not explicitly modeled, and health plan participation. The actuary should not reflect aging of the **covered population** when selecting the **trend** assumption for projecting future costs (see section 3.7.7 for a discussion of

“age-specific costs”). The actuary should consider separate **trend** rates for major cost components such as hospital, prescription drugs, other medical services, **Medicare integration**, and administrative **expenses**. Even if the actuary develops one aggregate set of **trend** rates, the actuary should consider these cost components when developing the aggregate set of **trend** rates.

When developing an initial **trend** assumption, the actuary should consider known or expected changes in per capita health costs in the year(s) following the **measurement date**. The actuary should consider the sustainability of current **trends** over an extended period, and the possible need for a long-term **trend** assumption that is different from the initial **trend** assumption. If these two **trend** assumptions are different, the actuary should choose an appropriate select period and transition pattern between the initial **trend** assumption and the long-term **trend** assumption.

When developing a long-term **trend** assumption and the select period for transitioning, the actuary should consider relevant long-term economic factors such as projected growth in per capita gross domestic product (GDP), projected long-term wage inflation, and projected health care expenditures as a percentage of GDP. The actuary should select a transition pattern and select period that reasonably reflects anticipated experience.

- b. Other Cost Change Rates—The actuary should consider other costs that may change in the future, such as the cost of life insurance and long-term care insurance.
- c. Participant Contribution Changes—Depending on the modeled **retiree group benefits program**, the measurement may require an assumption for the rate of change in **participant contributions**. For some **retiree group benefits programs**, this may be a function of health care **trend** rates or other economic assumptions. For some other **retiree group benefits programs**, there may be no **participant contributions** currently but caps on other funding sources and assumed **trend** rates may make it likely that **participant contributions** will be required in future years. In those cases, and depending upon the purpose of the measurement, the actuary should determine when **participant contributions** are expected to be required during the **measurement period** and model subsequent increases accordingly.
- d. Adverse Selection—When a **retiree group benefits program** requires **participant contributions**, those choosing to participate may have a higher average benefit cost than those not participating would have had. Also when a **retiree group benefits program** offers **benefit options**, **adverse selection** may have an impact on plan costs.

The actuary should consider whether **adverse selection** will result from such items as decreasing participation and, if **adverse selection** is projected to have a significant impact on the measurement, then the actuary should appropriately reflect that **adverse selection** in the measurement, either implicitly or explicitly. The actuary should document how that **adverse selection** is reflected in the measurement.

3.12.2 **Demographic Assumptions**—The actuary should comply with ASOP No. 35 when selecting the retirement, termination, mortality, and disability assumptions to be used in measuring **retiree group benefits** obligations. In applying ASOP No. 35, the actuary should take into account the purpose of the measurement and the differences between the characteristics of **retiree group benefits** obligations and the characteristics of pension benefit obligations. More refined demographic assumptions may be required to appropriately measure **retiree group benefits** obligations than are required to measure pension obligations. In determining whether demographic assumptions developed primarily for pension benefit measurements are appropriate for **retiree group benefits** measurements, the actuary should consider the following:

- a. Assumptions Based on Related Pension Plan Valuation—The actuary should determine whether the assumptions used in a related pension plan valuation are appropriate for **retiree group benefits programs** and, if not, modify the assumptions appropriately.
- b. Disability—Assumptions regarding disability incidence, recovery, mortality, and eligibility for Social Security disability benefits should be consistent with the coverage provided to disabled **participants** under the **retiree group benefits program**. When the actuary considers disabled life coverage significant to the measurement, the actuary should select assumptions that appropriately reflect when benefits are payable to disabled **participants**, the definition of disability, and how the benefits are coordinated with other programs.
- c. Retirement—The retirement assumption is critical in retiree health plan measurements because of the higher level of primary coverage a retiree receives prior to becoming eligible for Medicare. The actuary should select explicit age- or service-related retirement rates. A single average retirement age is generally not appropriate.
- d. Mortality—When the per capita health care costs are expected to increase during the projection period or when death benefits are being valued, the results of the measurement may be sensitive to the mortality assumption. The actuary should take this sensitivity into account when selecting a mortality improvement assumption under ASOP No. 35.

3.12.3 Participation and Dependent Coverage Assumptions—In addition to covering eligible retired **participants**, many **retiree group benefits programs** also cover **dependents** of retired participants. Also, **retiree group benefits programs** may offer some or all **participants benefit options**, such as HMOs, PPOs, and POS plans. The magnitude of the **retiree group benefits program** obligation can vary significantly as a result of the participation assumption and also the **dependent coverage assumption**. The actuary should therefore consider historical participation rates and trends in coverage rates when selecting these assumptions.

- a. **Retiree Group Benefits Program Participation**—For **retiree group benefits programs** that require some form of **participant contribution** to maintain coverage, some eligible individuals may not elect to be covered, particularly if they have other coverage available. Plan participation in this context is the result of acceptance, lapse, and re-enrollment elections. The actuary should take into account empirical data and future expectations regarding these elections when selecting participation assumptions. When developing the participation rates, the actuary should consider how changes in **retiree group benefits program** eligibility rules, **benefit options**, and **participant contribution** rates have influenced experience over time. Furthermore, plan participation may be different in the future due to **participants' responses** to changes in **participant contribution** levels and **benefit options**. For **retiree group benefits programs** that anticipate changes in these factors, the actuary should consider the appropriateness of participation rates that vary over the projection period for both current and future retired **participants**. The actuary should also consider eligibility rules governing dropping coverage and subsequent re-enrollment when selecting participation rates.
- b. **Dependent Coverage**—The actuary should consider who is eligible for coverage under the **retiree group benefits program** and make appropriate assumptions regarding the coverage of **dependents**. The actuary should consider the impact of the **retiree group benefits program's** rules governing changes in coverage after retirement, such as remarriage, if significant. The actuary should review historical data on **dependent coverage rates** and should consider **participant contribution rates** for **dependent coverage**. If the gender mix of future retired **participants** and currently retired **participants** differs, the actuary should consider developing separate **dependent coverage rates** for males and females.
- c. **Dependent Ages**—Whenever practical, the actuary should use actual data for the age of **dependents** of retired **participants**. If actual data is not available for all retired **participants**, the actuary should review the empirical data and consider developing an assumption to account for the difference in age between the **participant** and the **dependent** for the missing data. The **dependents** of an active employee today may not be the

same **dependents** covered at retirement. Therefore, the actuary should generally select an assumed age difference between retired **participants** and **dependents** for purposes of projecting future **dependent** coverage.

3.12.4 Effect of Retiree Group Benefits Program Design Changes on Assumptions—

When selecting assumptions, the actuary should consider the impact of relevant **retiree group benefits program** design changes during the **measurement period**. Whenever changes in provisions are being modeled, the actuary should consider whether assumptions that in combination are appropriate for measuring overall costs are also appropriate for valuing the element under study. For example, if a **plan sponsor** adds or advises the actuary of its intent to add HMO coverage options that may be selected by a portion of its group of retired **participants**, the actuary should consider how that affects the cost of current coverage, future cost **trends**, and participation. Both short-term and long-term implications of the change should be considered.

For most measurement purposes, the actuary should assume that the **retiree group benefits program** will continue indefinitely even though many **plan sponsors** have reserved the right to change unilaterally or terminate their **retiree group benefits programs**. The actuary should only include assumptions in the measurement model that attempt to quantify the probability that the current plan provisions will change significantly in the future when appropriate for the purpose of the measurement. In that event, the actuary should disclose that such an assumption has been used (see section 4.1(d)).

3.12.5 Assumptions Considered Individually and in Relation to Other Assumptions—

The actuary should select reasonable actuarial assumptions. The actuary should consider the reasonableness of each actuarial assumption independently on the basis of its own merits and its consistency with the other assumptions selected by the actuary. When selecting assumptions, the actuary should consider the degree of uncertainty, the potential for fluctuation, and the consequences of such fluctuation.

3.12.6 Changes in Assumptions—Whenever a change in an assumption is considered, the actuary should review other assumptions to assess whether they remain consistent with the changed assumption. For example, if the actuary is anticipating more disabled **participants** due to recent experience, consideration should be given to the impact on **benefit plan** costs of the health risk of this group.

3.13 Retiree Group Benefits Program Assets—In measuring the unfunded obligation and allocating **periodic costs** to time periods, the actuary should take into account **dedicated assets** of the **retiree group benefits program**, if any. The actuary should consider any additional requirements or restrictions on what assets can be taken into account that are imposed by the purpose of the measurement, such as requirements imposed by accounting standards. Depending on the purpose of the measurement, such as for

management planning purposes, taking non-dedicated assets into account may be appropriate.

The actuary should obtain sufficient details regarding insurance policies held as **dedicated assets** to determine an appropriate value, reflecting the nature of the contractual obligations upon early termination of the policies, as well as the costs of continued maintenance of the policies. If the cash surrender value of the policies is not readily determinable, the actuary should rely on his or her professional judgment to develop an appropriate value, depending on the purpose of the measurement.

The actuary should refer to ASOP No. 44 for guidance on the selection and use of an asset valuation method.

3.14 **Measuring the Value of Accrued or Vested Benefits**— Although in many situations retiree group benefits are neither accrued nor vested, some assignments do call for the actuary to measure accrued or vested benefits. The actuary should determine the following when making such measurements:

- a. the extent to which the **retiree group benefits** are accrued or vested;
- b. relevant plan provisions and applicable law (statutes, regulations, and other legally binding authority);
- c. the status of the plan (for example, whether the plan is assumed to continue to exist or be terminated);
- d. the contingencies upon which benefits become payable, which may differ for ongoing- and termination-basis measurements;
- e. the extent to which **participants** have satisfied relevant eligibility requirements for accrued or vested benefits and the extent to which future service or advancement in age may satisfy those requirements;
- f. whether the plan provisions regarding accrued benefits provide an appropriate attribution pattern for the purpose of the measurement (for example, following the attribution pattern of the plan provisions may not be appropriate if the plan's benefit accruals are significantly backloaded); and
- g. if the measurement reflects the effect of a special event (such as a plant shutdown or plan termination), factors such as the following:
 1. the likely effect of the special event on continued employment;
 2. the likely effect of the special event on employee behavior;
 3. the **expenses** associated with a potential plan termination, including transaction costs to liquidate plan assets; and

4. any likely changes in investment policy.
- 3.15 **Market-Consistent Present Values**—If the actuary calculates a **market-consistent present value**, the actuary should do the following:
- a. select assumptions based on the actuary’s observation of the estimates inherent in market data (as applied to assumptions for which guidance is provided in this standard as well as assumptions for which relevant guidance is provided in ASOP Nos. 27 and 35), depending on the purpose of the measurement; and
 - b. reflect benefits earned as of the **measurement date**.
- In addition, the actuary may consider how benefit payment default risk or the financial health of the **plan sponsor** affects the calculation.
- 3.16 **Relationship Between Asset and Obligation Measurement**—The actuary should reflect how **retiree group benefits program** or **plan sponsor** assets as of the **measurement date** are reported. For example, if the **retiree group benefits program** or **plan sponsor** assets have been reduced to reflect a lump sum paid, the lump sum or the value of the related projected benefit payments should be excluded from the obligation.
- 3.17 **Actuarial Cost Method**—When assigning **periodic costs** or **actuarially determined contributions** to time periods before the time benefit payments are due, the actuary should select an **actuarial cost method** that meets the following criteria:
- a. The period over which **normal costs** are allocated for an employee should begin no earlier than the date of employment and should not extend beyond the last assumed retirement age. The period may be applied to each individual employee or to groups of employees on an aggregate basis.
- When a plan has no active **participants** and no **participants** are accruing benefits, a reasonable **actuarial cost method** will not produce a **normal cost** for benefits. For purposes of this standard, an employee does not cease to be an active **participant** merely because he or she is no longer accruing benefits under the plan.
- b. The attribution of **normal costs** should bear a reasonable relationship to some element of the **retiree group benefit program**’s benefit formula or the employee’s compensation or service. The attribution basis may be applied on an individual or group basis. For example, the **actuarial present value of projected benefits** for each employee may be allocated by that employee’s own compensation or may be allocated by the aggregated compensation for a group of employees.
 - c. **Expenses** should be considered when assigning **periodic costs** or **actuarially determined contributions** to time periods. For example, administrative **expenses**

may be included in the per capita costs as discussed in section 3.7.15. Alternatively, the **expenses** for a period may be added to the **normal cost** for benefits or **expenses** may be reflected as an adjustment to the investment return assumption or the discount rate. As another example, **expenses** may be reflected as a percentage of **retiree group benefits** obligations or **normal cost**.

- d. The sum of the **actuarial accrued liability** and the **actuarial present value** of future **normal costs** should equal the **actuarial present value of projected benefits** and **expenses**, to the extent **expenses** are included in the liability and **normal cost**. For purposes of this criterion, under a **spread gain actuarial cost method**, the sum of the actuarial value of assets and the unfunded **actuarial accrued liability**, if any, should be considered to be the **actuarial accrued liability**.
- 3.18 **Allocation Procedure**—When selecting a **cost allocation procedure** or **contribution allocation procedure**, the actuary should consider factors such as the timing and duration of expected benefit payments and the nature and frequency of plan amendments. In addition, the actuary should consider relevant input received from the principal, such as a desire for stable or predictable **periodic costs** or **actuarially determined contributions**, or a desire to achieve a target funding level within a specified time frame.

- 3.18.1 **Consistency Between Contribution Allocation Procedure and the Payment of Benefits**—In some circumstances, a **contribution allocation procedure** may not be expected to produce adequate assets to make benefit payments when they are due even if the actuary uses a combination of assumptions selected in accordance with this standard and ASOP Nos. 27 and 35, an **actuarial cost method** selected in accordance with section 3.16 of this standard, and an asset valuation method selected in accordance with ASOP No. 44.

Examples of such circumstances include the following:

- a. a plan covering a sole proprietor with funding that continues past an expected retirement date with payment due in a lump sum;
- b. using the aggregate **actuarial cost method** for a plan covering three employees, in which the principal is near retirement and the other employees are relatively young; and
- c. a plan amendment with an amortization period so long that overall plan **actuarially determined contributions** would be scheduled to occur too late to make plan benefit payments when due.

When selecting a **contribution allocation procedure**, the actuary should select a **contribution allocation procedure** that, in the actuary's professional judgment, is consistent with the plan being able to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the **plan sponsor**

or other contributing entity will make **actuarially determined contributions** when due.

In some circumstances, the actuary's role is to determine the **actuarially determined contribution**, or range of **actuarially determined contributions**, using a **contribution allocation procedure** that the actuary did not select. If, in the actuary's professional judgment, such a **contribution allocation procedure** is significantly inconsistent with the plan being able to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the **plan sponsor** or other contributing entity will make **actuarially determined contributions** when due, the actuary should disclose this in accordance with section 4.1(o).

3.18.2 **Implications of Contribution Allocation Procedure**—The actuary should qualitatively assess the implications of the **contribution allocation procedure** or **plan sponsor's** funding policy on the plan's expected future **actuarially determined contributions** and **funded status**. For purposes of this section, contributions set by law or by a contract, such as a collective bargaining agreement, constitute a funding policy. In making this assessment, the actuary may presume that all actuarial assumptions will be realized and the **plan sponsor** (or other contributing entity) will make **actuarially determined contributions** anticipated by the **contribution allocation procedure** or funding policy. The actuary's assessment required by this section should be disclosed in accordance with section 4.1(p).

3.19 **Approximations and Estimates**—The actuary should use professional judgment to establish a balance between the degree of refinement of methodology and materiality. The actuary may use approximations and estimates where circumstances warrant. Following are some examples of such circumstances:

- a. situations in which the actuary reasonably expects the results to be substantially the same as the results of detailed calculations;
- b. situations in which the actuary's assignment requires informal or rough estimates; and
- c. situations in which the actuary reasonably expects the amounts being approximated or estimated to represent only a minor part of the overall **retiree group benefits** obligation, **periodic cost**, or **actuarially determined contribution**.

3.20 **Volatility**—If the scope of the actuary's assignment includes an analysis of the potential range of future **retiree group benefits** obligations, **periodic costs**, **actuarially determined contributions**, or **funded status**, the actuary should consider sources of

volatility that, in the actuary’s professional judgment, are significant. Examples of potential sources of volatility include the following:

- a. plan experience differing from that anticipated by the economic or demographic assumptions, as well as the effect of new entrants;
- b. changes in economic or demographic assumptions, such as medical **trend**, initial per capita health care costs, acceptance rates, or lapse rates;
- c. the effect of discontinuities in applicable law (statutes, regulations, and other legally binding authority) or accounting standards, such as welfare benefit fund limits or the end of amortization periods;
- d. the delayed effect of smoothing techniques, such as the pending recognition of prior experience losses; and
- e. patterns of rising or falling **periodic cost** expected when using a particular **actuarial cost method** for the **covered population**.

When analyzing potential variations in economic and demographic experience or assumptions, the actuary should exercise professional judgment in selecting a range of variation in these assumptions (while maintaining internal consistency among these assumptions, as appropriate) and in selecting a methodology by which to analyze them, consistent with the scope of the assignment.

3.21 **Reasonableness of Results**—The actuary should review the measurement results for reasonableness. For example, the actuary could compare the overall measurement results to benchmarks such as measurement of similar **retiree group benefits programs**, or could review the results for sample **participants** for reasonableness.

3.21.1 **Modeled Cash Flows Compared to Recent Experience**—The actuary should compare the expected costs produced by the model for the first year from the **measurement date** to actual costs available over a recent period of years. If the expected and actual costs are significantly different, the actuary should determine, and should consider documenting, if appropriate, the likely causes of such differences (for example, cost **trends**, large claims, a change in the demographics of the group, or the volatility of experience in **benefit plans** with limited credible experience), and should determine the impact of those differences on the reasonableness of the measurement results.

3.21.2 **Results Compared to Last Measurement**—The actuary should compare the overall results to the last measurement’s results when available and applicable. If the results are significantly different from results the actuary expected based on the last measurement, the actuary should determine, and should consider documenting, if appropriate, the likely causes of such differences. If another actuary performed the prior measurement, some allowance may be made for

differences due to different actuarial techniques or modeling. The actuary should, if practical, review the prior actuary's documentation and, if necessary, seek further information.

- 3.22 **Evaluation of Assumptions and Methods**—An actuarial communication should identify the party responsible for each material assumption and method. Where the communication is silent about such responsibility, the actuary who issued the communication will be assumed to have taken responsibility for that assumption or method.
- 3.22.1 **Prescribed Assumption or Method Set by Another Party**—The actuary should evaluate whether a **prescribed assumption or method set by another party** is reasonable for the purpose of the measurement, except as provided in section 3.22.3. The actuary should be guided by Precept 8 of the Code of Professional Conduct, which states, “An Actuary who performs Actuarial Services shall take reasonable steps to ensure that such services are not used to mislead other parties.” For purposes of this evaluation, reasonable assumptions or methods are not necessarily limited to those the actuary would have selected for the measurement.
- 3.22.2 **Evaluating Prescribed Assumption or Method**—When evaluating a **prescribed assumption or method set by another party**, the actuary should determine whether the prescribed assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the measurement. If, in the actuary's professional judgment, there is a significant conflict, the actuary should disclose this conflict in accordance with section 4.2(a).
- 3.22.3 **Inability to Evaluate Prescribed Assumption or Method**—If the actuary is unable to evaluate a **prescribed assumption or method set by another party** without performing a substantial amount of additional work beyond the scope of the assignment, the actuary should disclose this in accordance with section 4.2(b).
- 3.23 **Reliance on a Collaborating Actuary**—The various elements of a **retiree group benefits** measurement require expertise in the two different actuarial fields of health data analysis and long-term projections. In recognition of the complexities involved, two or more actuaries with complementary qualifications in the health and pension practice areas may collaborate on a project. While each actuary may concentrate on his or her area of expertise during the project, the actuary (or actuaries) issuing the actuarial opinion must take professional responsibility for the overall appropriateness of the analysis, assumptions, and results.
- 3.24 **Use of Roll-Forward Techniques**—The actuary may determine that it is appropriate for the purpose of the measurement to use prior measurement results and a roll-forward technique rather than conduct a new full measurement. The actuary should not use roll-forward techniques unless, in the actuary's professional judgment at the time of the roll-

forward calculation, the resulting measurement is not expected to differ significantly from the results of a new full measurement.

3.24.1 **Full and Partial Roll-Forward**—Roll-forward techniques include full roll-forwards of claims data and census data, as well as partial roll-forward techniques. For example, the actuary may use partial roll-forward techniques that use health care claim costs developed for the prior measurement trended forward to the current **measurement date** coupled with updated census data.

3.24.2 **Limitation**—The actuary may use roll-forward techniques to reduce the frequency of full measurements. The actuary should not roll-forward prior measurement results if the **measurement date** of those results is three or more years earlier than the current **measurement date**. For example, a January 1, 2016 measurement could be used to develop roll-forward results as of January 1, 2017 and 2018, but should not be used for measurements or **periodic cost** allocations after December 31, 2018.

3.24.3 **Appropriateness**—The actuary should not use full roll-forward techniques when the **covered population, retiree group benefits program** design, or other key model components have changed significantly since the last full measurement.

Section 4. Communications and Disclosures

4.1 **Communication Requirements**—Any actuarial communication prepared to communicate the results of work subject to this standard should comply with the requirements of ASOP Nos. 23, 27, 35, 41, and 44. In addition, such communication should contain the following disclosures, when relevant and material. An actuarial communication can comply with some or all of the specific requirements of this section by making reference to information contained in other actuarial communications available to the intended users (as defined in ASOP No. 41, *Actuarial Communications*), such as an annual **actuarial valuation** report.

- a. a statement of the intended purpose of the measurement and a statement to the effect that the measurement may not be applicable for other purposes;
- b. the **measurement date**;
- c. a description of adjustments made for events after the **measurement date** under section 3.4.2;
- d. information about known significant **retiree group benefits program** provisions (such as types of **benefit plans** provided, benefit eligibility conditions, retired **participant** and **dependent** coverage options, and **participant contribution** requirements), a description of known changes in significant plan provisions included in the **actuarial valuation** from those used in the immediately preceding

measurement prepared for a similar purpose, a description of any known significant **retiree group benefits program** provisions not reflected in the model along with the rationale for not including such significant plan provisions, and any anticipated future changes (see sections 3.5.1(h) and 3.12.4);

- e. the date(s) as of which the **participant** and financial information were compiled;
- f. summary information about the **covered population**;
- g. if hypothetical data are used, a description of the data;
- h. a description of any accounting policies or funding elections made by the principal that are pertinent to the measurement;
- i. a brief description of the information and analysis used in selecting each significant assumption that was not prescribed. Items to disclose could include any specific approaches used, sources of external advice, and how past experience and future expectations were considered. For example, for the initial per capita health care costs and Medicare-related assumptions, a brief description of the methodology used to develop these assumptions as well as any combining of **benefits plans** (section 3.6.6) for measurement purposes and a description of the extent to which they are based on **premium** (or self-funded equivalent) rates and any adjustments to those rates (see section 3.7.5) should be included. If age-specific costs were not used, the actuary should disclose the rationale for not doing so;
- j. a description of the future health care cost **trend** rates used (see section 3.12.1(a));
- k. a description of all other significant assumptions (including, but not limited to, participation and dependent coverage assumptions);
- l. if using modeling or projection techniques other than those mentioned in section 3.7, a description of the method used and a discussion on its applicability;
- m. a description of the **actuarial cost method** and the manner in which **normal costs** are allocated, in sufficient detail to permit another actuary qualified in the same practice area to assess the significant characteristics of the method (for example, how the **actuarial cost method** is applied to multiple benefit formulas, compound benefit formulas, or benefit formula changes, where such plan provisions are significant);
- n. a description of the **cost allocation procedure** or **contribution allocation procedure** including a description of **amortization methods** and a description of any pay-as-you-go funding (i.e., the intended payment by the **plan sponsor** of some or all benefits when due). The actuary should disclose the outstanding

amortization balance, the amortization payment included in the periodic cost or actuarially determined contribution, and the remaining amortization period for each amortization base along with a disclosure if the unfunded **actuarial accrued liability** is not expected to be fully amortized. For purposes of this section, the actuary should assume that all actuarial assumptions will be realized and **actuarially determined contributions** will be made when due;

- o. a statement indicating that the **contribution allocation procedure**, if any, is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, if applicable in accordance with section 3.18;
- p. a qualitative description of the implications of the **contribution allocation procedure** or **plan sponsor's** funding policy on future expected plan **actuarially determined contributions** and **funded status** in accordance with section 3.18.2. The actuary should disclose the significant characteristics of the **contribution allocation procedure** or **plan sponsor's** funding policy, and assumptions used in the assessment;
- q. a description of the types of benefits regarded as accrued or vested if the actuary measured the value of accrued or vested benefits, and, to the extent the attribution pattern of accrued benefits differs from or is not described by the plan provisions, a description of the attribution pattern;
- r. a description of how benefit payment default risk or the financial health of the **plan sponsor** was included if a **market-consistent present value** measurement was performed;
- s. **funded status** based on an **immediate gain actuarial cost method** if the actuary discloses a **funded status** based on a **spread gain actuarial cost method**, unless the sole purpose of the calculation was contribution determination in accordance with federal law or regulation. The **immediate gain actuarial cost method** used for this purpose should be disclosed in accordance with section 4.1(m);
- t. if applicable, a description of the particular measures of plan assets and plan obligations that are included in the actuary's disclosure of the plan's **funded status**. For funded status measurements that are not prescribed by federal law or regulation, the actuary should accompany this description with each of the following additional disclosures:
 1. whether the **funded status** measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations;
 2. whether the **funded status** measure is appropriate for assessing the need for or the amount of future **actuarially determined contributions**; and

3. if applicable, a statement that the **funded status** measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets.
- u. a brief description of the roll-forward method, if any, used in the calculations (see section 3.24);
- v. a description of any significant and unresolved inconsistencies in data or administration, such as those mentioned in sections 3.9 and 3.10;
- w. a statement, appropriate for the intended users, indicating that future measurements (for example, of **retiree group benefit program** obligations, **periodic costs**, **actuarially determined contributions** or **funded status** as applicable) may differ significantly from the current measurement. For example, a statement such as the following could be applicable: “Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements.”

In addition, the actuarial communication should include one of the following:

1. if the scope of the actuary’s assignment included an analysis of the range of such future measurements, disclosure of the results of such analysis together with a description of the factors considered in determining such range; or
2. a statement indicating that, due to the limited scope of the actuary’s assignment, the actuary did not perform an analysis of the potential range of such future measurements.
- x. a description of known changes in assumptions and methods from those used in the immediately preceding measurement prepared for a similar purpose. For assumption and method changes that are not the result of a **prescribed assumption or method set by another party** or a **prescribed assumption or method set by law**, the actuary should include an explanation of the information and analysis that led to those changes. The explanation may be brief but should be pertinent to the **retiree group benefit program**’s circumstances;

- y. a description of all changes in **cost allocation procedures** or **contribution allocation procedures** that are not a result of a **prescribed assumption or method set by law**, including the resetting of an actuarial asset value. The actuary should disclose the reason for the change, and the general effect of the change on relevant **periodic cost**, **actuarially determined contribution**, **funded status**, or other measures, by words or numerical data, as appropriate. The disclosure of the reason for the change and the general effects of the change may be brief but should be pertinent to the **retiree group benefit program's** circumstances; and
- z. if, in the actuary's professional judgment, the actuary's use of approximations and estimates could produce results that differ materially from results based on a detailed calculation, a statement to this effect.

4.2 **Disclosure about Prescribed Assumptions or Methods**—The actuary's communication should state the source of any prescribed assumptions or methods.

With respect to **prescribed assumptions or methods set by another party**, the actuary's communication should identify the following, if applicable:

- a. any **prescribed assumption or method set by another party** that significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the measurement (section 3.22.2); or
- b. any **prescribed assumption or method set by another party** that the actuary is unable to evaluate for reasonableness for the purpose of the measurement (section 3.22.3).

4.3 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:

- a. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- b. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.4 **Confidential Information**—Nothing in the standard is intended to require the actuary to disclose confidential information.

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Note: The following appendix is provided for informational purposes, but is not part of the standard of practice.

Appendix 1

Background, Current Practices, and Supplementary Information

Background

The original ASOP No. 6 was effective October 17, 1988. In addition, actuaries were provided guidance by Actuarial Compliance Guideline (ACG) No. 3, *For Statement of Financial Accounting Standards No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions* (AGC No. 3), which was originally effective December 1, 1992. During the time these documents were being developed, the Financial Accounting Standards Board was raising the visibility of financial issues related to retiree group benefits with its development of Statement of Financial Accounting Standard (SFAS) No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions*. (Note that effective in July 2009, FASB reorganized all U.S. GAAP into one codification. Accounting Standards Codification (ASC) 715-60—Compensation—Retirement Benefits—Defined Benefit Plans—Other Postretirement replaces SFAS No. 106.) Prior to the issuance of the accounting guidance currently included in ASC 715-60, most plan sponsors provided and accounted for retiree group benefits on a pay-as-you-go basis. The move to accrual accounting necessitated greater actuarial involvement. ASOP No. 6 and ACG No. 3 were written with a high level of educational content because the measurement of retiree group benefits obligations was an emerging practice area that would be new to many actuaries.

The measurement of retiree group benefits obligations continued to develop as an actuarial field within the profession. In 1999, the ASB determined that practice in this field had developed sufficiently to permit revision of ASOP No. 6. It convened a special task force of knowledgeable practitioners in the retiree group benefits field to draft the revision of this standard. The Task Force on Retiree Group Benefits was charged with (1) updating ASOP No. 6 to provide guidance to actuaries regarding appropriate practices and to reduce the amount of educational material; (2) determining whether there was a continuing need for ACG No. 3; and (3) evaluating the applicability to retiree group benefits of ASOPs written since the original adoption of ASOP No. 6. A revised version of ASOP No. 6 was adopted by the ASB in December 2001.

The process of measuring retiree group benefits obligations is similar to the process of measuring pension obligations. Since the prior ASOP No. 6 was adopted, the ASB has adopted or revised the following standards that provide more detailed guidance regarding specific elements of the process of measuring retiree group benefits obligations:

1. ASOP No. 5, *Incurred Health and Disability Claims*;
2. ASOP No. 23, *Data Quality*;

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3. ASOP No. 25, *Credibility Procedures*;
4. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
5. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;
6. ASOP No. 41, *Actuarial Communications*; and
7. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

In addition, ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, was revised to create an “umbrella” standard to tie together the applicable standards for pension plans and address overall considerations for the actuary when measuring pension obligations.

Current Practices

This standard and the related standards listed in the Background section of this appendix 1 cover actuarial practices that are central to the work regularly performed by actuaries measuring retiree group benefits obligations. The actuarial tasks covered by the standards are performed for a number of purposes, examples of which are discussed below:

1. Periodic Cost, Plan Sponsor Actuarially Determined Contribution, and Benefit Recommendations—Calculations may be performed for purposes of determining actuarial periodic cost, plan sponsor actuarially determined contribution, and benefit recommendations and related information. Examples are calculations related to the following:
 - a. recommendations for the assignment of periodic costs or actuarially determined contributions to time periods for retiree group benefits programs;
 - b. recommendations for the type and levels of benefits for specified periodic cost or plan sponsor actuarially determined contribution levels;
 - c. plan sponsor actuarially determined contributions required under standards imposed by statute, regulations, or other third-party requirements;
 - d. maximum actuarially determined contributions deductible for tax purposes;
 - e. information required to evaluate alternative plan designs, assumptions, cost management programs, and provider networks; and
 - f. determination of progress toward a defined financial goal, such as funding of projected benefits or limiting annual plan cash expense.

2. Evaluations of Current Funding Status—Calculations may be performed for purposes of comparing available assets to the actuarial present value of benefits (or a subset of those benefits) specified by the plan. Examples are calculations related to the following:
 - a. actuarial present value of current or future benefit accruals (to the extent retiree group benefits are accrued);
 - b. actuarial present value of benefits payable to currently retired participants or active participants eligible to retire; and
 - c. information required with respect to plan mergers, acquisitions, spin-offs, and business discontinuances.
3. Projection of Cash Flow—Calculations may be done for the sole purpose of projecting the annual cash flow of retiree group benefits obligations. Examples are calculations related to the following:
 - a. Time horizon to exhaust trust assets; and
 - b. Projections of participant contributions or changes in participant contributions.
4. Evaluations of the Impact of Government or Third-Party Funding—Calculations may be performed to estimate the effect on funding of government or third-party funding. Some examples of such funding are:
 - a. Retiree Drug Subsidy (RDS) program providing partial reimbursements to plan sponsors of drug benefits for Medicare-eligible retired participants;
 - b. Federal direct subsidy of Part D plans; and
 - c. Pharmaceutical manufacturer discounts on brand name drugs during the coverage gap.

Supplementary Information

Modeling of Retiree Group Benefits Obligations

The models used to value retiree group benefit obligations have become increasingly sophisticated. Models commonly use age-specific initial per capita health care costs within the retired population (for example in individual age brackets). Some of these models are based on net incurred claims, while other models are based on gross expenses incurred reduced by amounts paid outside the plan or not covered by the plan. Some models project a distribution of expected claims with an associated probability distribution, while other models use separate age-specific per capita claim costs for the last year of life and for survivors.

Despite the development of these more sophisticated approaches, some actuaries continue to use highly simplified models. Examples include using pension census data as the basis for the measurement, using only two initial per capita health care costs (for Medicare eligible participants and for participants who are not yet eligible for Medicare), and developing initial per capita health care costs based solely on premiums or normative databases. Such simplified approaches may result in significantly understated or overstated retiree group benefits obligations for the following reasons:

1. Retiree group benefits eligibility requirements are often different from pension benefit eligibility requirements, so pension census data may not appropriately reflect retiree group benefits program participation;
2. Significant discrepancies between the plan sponsor's stated policy and actual plan operation may not be identified, and "hidden" subsidies may not be valued;
3. Normative databases may be applied inappropriately or may be outdated;
4. The effects of aging of the retired population on future per capita claim costs may not be appropriately taken into account;
5. A trend assumption that reaches the ultimate rate too quickly may not adequately reflect the structural upward pressures on medical costs;
6. Expected future participation rates may not reflect recent experience; or
7. The impact of expected future participant contribution increases on future participation and projected per capita claim costs of participants may not be appropriately reflected.

Possible Data Inconsistencies

As part of the development of the model, the eligibility and payment data received may conflict significantly with information received about known retiree group benefits program provisions or administration. Examples of inconsistencies include the following:

1. Average claims costs that are secondary to Medicare are very high in relation to average costs that are primary. This might reveal that the carve-out method of integration with Medicare may not have been used, despite the plan sponsor's indication of that method, or that the classification of the covered dependent is based on the retired participant's age.
2. Participant contributions before Medicare eligibility are so low that it is unlikely that plan sponsor subsidies are as limited as the plan sponsor may indicate.
3. The ratio of dependents to retired participants in total or for a subgroup (for instance, those who are not eligible for Medicare) is inconsistent with expectations. This might mean that it is unlikely surviving dependent coverage is as stated, that coding of dependent ages is inaccurate, or that surviving dependents were coded as "retired participants."

4. Reported provisions include benefit maximums, but the actuary's analysis of claims data indicates a likelihood that claims are being paid in excess of the maximum.

Measurements Using Premiums

As defined in this standard, a premium is the price charged by a risk-bearing entity, such as an insurance or managed care company, to provide risk coverage. The premium usually has a basis in the expected value of future costs, but the premium will also be affected by other considerations, such as marketing and profit goals, competition, and legal restrictions. Because of these other considerations, a premium for a coverage period is not the same as the expected cost for the coverage period.

The demographics of the group for which the premium was intended may be different from the demographics of the group being valued. When these two groups are different, the premiums are unlikely to reflect the expected health care costs for the group being valued, even if it is a subset of the total group for which the premium was determined. In particular, the expected value of future costs for a group of retired participants is unlikely to be the same as for a group consisting of active participants and the same retired participants. Examples of this are shown in the "Participant Contributions" section below.

The term "premium" is commonly used for insured group plans and self-insured group plans. In the case of self-insured plans, the "premium" may also be referred to as "budget rates" or "phantom premiums." Future changes in insured premiums are frequently affected by the experience of the insured group. Further comments about common types of retiree group benefits program premiums follow:

1. **Self-Insured Premiums**—Some self-insured plans have expenditures that the plan sponsor refers to as "premiums" or "premium rates." These premiums may reflect the experience of retired participants, active employees, or both. Also, the premiums may reflect only expected claims experience, or may include other adjustments (such as administrative expenses and stop-loss claims and premiums). Furthermore, the premiums may reflect the effect of the plan sponsor's contribution or managed care strategy. The premiums also may not reflect supplemental funding contributions not considered in the ratemaking process.
2. **Community-Rated Premiums**—In some regulatory jurisdictions, community-rated premiums are required by statute for some fully insured plans. There is variation in the structure of community-rated premiums. For example, retired participants not eligible for Medicare may be included with active employees in a community-rated premium category, while retired participants eligible for Medicare may be included in a separate community-rated premium category. There are also different community-rating methodologies, some incorporating group-specific characteristics. Note that a community-rated premium including retirees not eligible for Medicare and active employees probably understates the expected claim cost for the retirees alone.

There are many pooled health fund entities that provide contribution rates that are a blend of active employee and pre-Medicare retiree claim experience (and may also include

Medicare retiree claim experience). Historically, similar types of funding arrangements have failed because their premium rating structure did not adequately reflect the risks of the enterprise. Since geography and demographics are key indicators of health care risk (and recognized by most of the new marketplace exchanges under the Patient Protection and Affordable Care Act, discussed in further detail below), many of today's pooled health funds may move to recognizing some variation of those risk characteristics.

3. Other Fully Insured Plans—In addition to community-rated plans, there are other types of fully insured plans, and there can be some variation in how actual plan experience affects the premiums. The comments above on self-insured premiums also apply here.

Interaction Between Trend and Plan Provisions

Plan provisions and health care trend rates in combination impact the projected net per capita health care costs. Examples of the interaction of plan provisions and health care trend rates include the following:

1. Covered charges can be affected by limits on allowable provider fees and the plan's Medicare integration approach. Benefit plan provisions may help in identifying these limits, as well as what services are covered.
2. Health plan deductibles may or may not be set at a fixed-dollar amount. Health care trend will, over time, erode the relative value of a fixed-dollar deductible.
3. Coinsurance payments may be expressed as a percentage or fixed-dollar amount. Again, over time, trend will erode the relative value of a fixed-dollar coinsurance.
4. The Medicare program provides coverage for most U.S. retirees over age 65; however, the retiree group benefits program may cover a different mix of services than Medicare. Trend rates may differ between Medicare-covered services and the retiree group benefits.
5. Other payments or offsets may exist, such as subrogation recoveries or plans other than Medicare. These payments or offsets may change in the future.
6. Lifetime and other maximum dollar limits also affect claims costs, and the effect can change over time.

Participant Contributions

Participant contributions are very important to the financial understanding of how retiree group benefits programs work. Plan sponsors must advise participants and plan administrators of the specific dollar amounts of currently required contributions. Plan sponsors usually have administrative policies for determining future contributions (formulas, subsidy limits, or overall contribution philosophy). Based on the required contributions, an individual will decide whether to participate, which may result in adverse selection.

Formulas, subsidy limits, and the contribution philosophy of the plan sponsor are subject to different interpretations about what data and techniques are to be used in deriving the current

monthly contribution used in the measurements of retiree group benefits obligations. Here are two examples:

1. The plan sponsor's stated policy is that retired participants who are not yet Medicare eligible will contribute 50% of the cost of their health care benefits. However, the plan sponsor determines a retiree contribution of \$200 per month (\$2,400 per year) based on average annual per capita health care claims of \$4,800 for active employees and pre-Medicare retirees combined. When the actuary evaluates the claims experience of pre-Medicare retirees separately from that of the active employees, the actuary determines that the average annual claim per retired participant is \$8,000. So the plan sponsor subsidy is really \$5,600 or 70%, not the stated 50%.
2. A plan sponsor will pay a fixed subsidy of \$4,000 annually toward retiree health care coverage for retired participants who are not Medicare eligible. The plan sponsor determines an annual retiree contribution of \$1,000 based on average per capita claims of \$5,000 for active employees and pre-Medicare retired participants combined. However, when the actuary evaluates the claims experience for pre-Medicare retired participants, the average annual claims per retired participant is determined to be \$9,000. The actual plan sponsor subsidy is \$8,000 (\$9,000 average claims per retired participant less \$1,000 retiree contribution)—double the fixed subsidy of \$4,000.

Once the contribution is determined for the current year, future increases can then be incorporated into the model. The contribution increase assumption is often a function of the claims trend assumption. If the model assumes contributions increase at the same trend as assumed for age-specific claims costs, the projected contributions will not have a constant relationship to projected claims, due to the aging of the population.

Some plans impose conditions such that contributions will begin a certain pattern at some triggering point in the future. This can happen in a number of ways, but the most common may be the use of "cost caps," where the sponsor has limited its subsidy to an annual amount per capita that has not yet been reached. Participant contributions may or may not be required currently, but after the cap is reached, participant contributions are to absorb all the additional costs. After the caps have been reached, this design is akin to the defined dollar approach, but before that point, the plan sponsor's costs will increase. The assumptions about future health care trend rates (interacting with the cost caps) will increase projected costs to a time when the caps are reached, and thereafter participant contributions will increase.

Finally, participation rates may be lower when contributions are required. Assumptions about lower participation rates can vary by small amounts and yet result in large differences in present values. Furthermore, lower participation may result in adverse selection on the part of participants. The combination of lower participation and adverse selection assumptions may or may not be significant in a measurement model.

Health Care Reform Considerations

The Patient Protection and Affordable Care Act (PPACA) was passed in the U.S. in March 2010 and includes many provisions that actuaries will need to consider in selecting assumptions in future valuations. Because the legislation was so comprehensive, it may be years before the impact of the new provisions result in a stable set of assumptions.

Key provisions of the PPACA that may affect retiree group benefits assumptions are:

Market Reforms. Several different requirements are imposed by the PPACA with varying effective dates. Whether these requirements apply will depend on if a plan is a retiree-only plan. These effective dates also may depend on whether a plan is grandfathered. Because these market reforms do not apply to retiree-only medical plans, whether plans being valued meet the definition of such a plan (basically, a separate legal plan, unique plan identification, and coverage for fewer than two active employees) is key.

Some plans are grandfathered from certain aspects of these market reforms if they do not significantly change the plan design from the date of PPACA enactment. The most common reason a retiree plan may lose its grandfathered status is if the employer's percentage subsidy for the plan is materially reduced. All plans with a cap on the subsidy provided by the plan sponsor or other entity will eventually fail grandfathered status.

Examples of PPACA changes required for all plans (except for retiree-only plans) include the following: having no lifetime limits; having no pre-existing condition exclusions; establishing out-of-pocket limits that include all benefits and do not exceed the limits on out-of-pocket costs for High Deductible Health Plans; and providing coverage for dependent children until age 26 (can have a greater relative impact on pre-65 retiree plans than on active employee plans).

Examples of additional market reforms required for non-grandfathered plans include the following: providing coverage of preventive health care with no cost sharing; satisfying non-discrimination requirements for all medical plans; and providing the same coverage for emergency services regardless of network status.

The above reforms may significantly impact the appropriate level of starting health care claims costs as well as cost trends.

Medicare Advantage. Government payments to Medicare Advantage plans are generally reduced from those payable under prior law. These plans also must meet the same minimum loss ratio requirements that apply to other plans (greater than 85 percent). In addition, payments will be tied to quality measures and beneficiary satisfaction ratings. These changes may affect health care claims costs, trend rates, and plan participation.

Retiree Drug Subsidy. Prior law allowed the plan sponsor to receive retiree drug subsidies (RDS) from the government tax-free and not reduce its actual pharmacy costs by the amount of the retiree drug subsidy received in determining its tax-deductible benefit cost. PPACA requires the employer to reduce its actual tax deduction for pharmacy costs by the amount of the retiree drug subsidy received, effectively eliminating the tax advantage of the RDS program for many

for-profit employers. FASB required this part of the legislation be reflected in financial statements for private employers as soon as the impact could be determined.

The elimination of the tax-favored RDS has led many plan sponsors to reevaluate alternative pharmacy designs and funding to yield financially better results. Any changes the plan sponsor makes may impact the valuation assumptions and methods, including eliminating the tax asset adjustments made for current RDS payments, adjusting future trends, and adjusting claim costs for anticipated design changes.

Part D Employer Group Waiver Plans (EGWPs). PPACA improved the Medicare Part D standard benefit by closing the coverage gap (also known as the “donut hole”) by 2020. This change should result in larger direct subsidy payments to Part D plans than under the previous law. However, because of the complexity of the calculation of the payments to the Part D plans, the actuary will need to work closely with the Part D plan to estimate the size and growth pattern of these Part D payments.

High Cost Plan Excise Tax. The PPACA imposes a non-deductible excise tax beginning in 2018 on plans that exceed specified dollar thresholds. For 2018, the threshold for single coverage is \$10,200 (may be adjusted depending on cost trends from 2014). For individuals aged 55 to 64, an additional \$1,650 is added to the threshold. Retirees with family coverage have thresholds of \$27,500 and an additional \$3,450. The thresholds are indexed to general inflation after 2018. Many health plans will eventually exceed these thresholds over typical projection periods and, therefore, the liabilities could include payment of the tax plus any gross-up of the tax that might be charged by the insurer.

Health Exchanges. Health exchanges (or Public Marketplaces) became available beginning in 2014. These new exchanges made available health insurance coverage for individuals who are not eligible for Medicare. Some plan sponsors may terminate current coverage or utilize the new options in their retiree benefit offerings. This may require changes to costs or the anticipation of selection of different plan options. Considerations may be similar to those involved in the current treatment of private exchanges for Medicare beneficiaries.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this revision of ASOP No. 6 now titled, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*, was issued in March 2013 with a comment deadline of August 30, 2013. Thirteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter.

The Retiree Group Benefits Subcommittee carefully considered all comments received and the subcommittee, Pension Committee, and ASB reviewed (and modified, where appropriate) the proposed changes.

In addition, comments were received on the second exposure draft of the revision of ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. In areas where parallel language is included in ASOP Nos. 4 and 6, changes made to ASOP No. 4 in response to those comments are reflected in this revised standard.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the subcommittee, the Pension Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested that the word “cost” in connection with per capita health costs could be confused with the other uses of the word “cost.”
Response	The reviewers note that this usage is common in connection with retiree group benefits programs and that the standard specifically defines “periodic cost,” which is in bold letters wherever it is used, to reduce confusion. The reviewers, therefore, made no change.
Comment	A few commentators opined that retiree group benefit actuaries serve clients and not the public at large. In this view: <ul style="list-style-type: none">• Actuaries serve clients and prepare work for the client’s benefit and at the client’s behest;• No party other than the client should expect to benefit or draw any inference from the actuary’s work;• Other entities in society provide regulations that serve the public interest;• As a result of the prior bullets, the standards should not require any work or disclosure that is intended to benefit interested parties in the public at large.
Response	The reviewers considered this viewpoint but concluded the current paradigm for self-governance established by the <i>Code of Professional Conduct</i> requires the ASOPs to reflect the profession’s responsibility to the public and made no change.

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SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested that benefit payment projections should be mentioned in this section.
Response	The reviewers note that cash flow projections are included in the scope of the standard in section 1.2 and made no change.
Comment	One commentator suggested that “defined dollar programs or programs containing health retirement accounts” as well as “executive health and/or fringe benefits for retired executives” should be included.
Response	The reviewers note that these are examples of retiree group benefits programs and do not need to be explicitly mentioned, and made no change.
Section 1.2, Scope	
Comment	One commentator suggested that the standard say that it does not apply to individual benefit calculations or nondiscrimination testing.
Response	The reviewers believe that the description of the scope of the standard was sufficiently clear and made no change.
Section 1.4, Effective Date	
Comment	One commentator expressed the opinion that using roll-forward techniques would not be appropriate for measurements performed in actuarial work covered by this standard.
Response	The reviewers considered this comment, noted that using roll-forward techniques was a common and appropriate practice in this area, and did not change the language.
SECTION 2. DEFINITIONS	
Comment	One commentator suggested that the word “group” be defined or be replaced by “population” or “covered population.”
Response	The reviewers note that the use of the word “group” in the context of “group being valued” is expected to be understood by the users of the standard and that it might not be the same as the “covered population,” and made no change.
Comment	One commentator suggested that the term “obligations” should be defined as this term is used in the title of the standard and throughout the standard.
Response	The reviewers believe that the common understanding of this term is sufficient for the purposes of the standard and made no change.
Comment	One commentator suggested that the phrase “implicit subsidy” be defined.
Response	The reviewers believe that the concept of “implicit subsidy” is commonly understood and made no change.
Section 2.9, Benefit Plan	
Comment	One commentator suggested changing “Benefit Plan” to “Retiree Benefit Plan,” “Benefit Plan Member” to “Retiree Benefit Plan Member,” and “Benefit Option” to “Retiree Benefit Option.”
Response	The reviewers note that while the ASOP covers only retiree group benefits, benefit plans might cover both actives and retirees, and made no change.

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Section 2.11, Contingent Participant	
Comment	One commentator suggested that this definition is not needed as the defined word “participant” includes “contingent participant.”
Response	The reviewers agree with this suggestion and made the proposed change.
Section 2.13, Cost Allocation Procedure	
Comment	One commentator suggested changes to the definition.
Response	The reviewers agree with most of the suggestions and also made other minor modifications to improve clarity.
Section 2.14, Covered Population	
Comment	One commentator suggested that the phrase “participating dependents” was redundant and confusing. This commentator also asked whether the term “participant” includes “dependents.”
Response	The reviewers note that “participants” was intended to include all individuals who are receiving or are reasonably expected to receive benefits coverage and therefore would include “dependents.” In the standard the word “participant” is occasionally modified by the word “active” or “retired” to distinguish a specific type of “participant” from a “dependent.” The reviewers modified the definition of “participant” to explicitly include a “dependent.”
Section 2.16, Dependents	
Comment	One commentator indicated that it wasn’t clear if yet-to-be-identified dependents were included and proposed language to make it clear that they were included in the definition.
Response	The reviewers agree and made the proposed change.
Section 2.19, Immediate Gain Actuarial Cost Method	
Comment	One commentator questioned the need to define this term.
Response	The reviewers note that it was included because of the disclosure requirements concerning “funded status” and to be consistent with ASOP No. 4, <i>Measuring Pension Obligations and Determining Pension Plan Costs or Contributions</i> , and made no change.
Section 2.20, Market-Consistent Present Values	
Comment	One commentator suggested deleting the phrase “that are expected.” Another commentator asked if it was possible to reflect risk loading or adjustments due to uncertainty in the benefit payments.
Response	The reviewers revised the definition to be consistent with the definition in ASOP No. 4. The reviewers made no further change.
Section 2.23, Medicare Integration	
Comment	One commentator suggested changing “health plan” to “retiree group benefits program” or to “benefit plan.”
Response	The reviewers agree and changed “health plan” to “benefit plan.”
Section 2.27, Participant Contributions	
Comment	One commentator suggested changes to the definition to clarify the intent.
Response	The reviewers agree that the definition could have been clearer and made changes to the language to clarify the meaning of the phrase “participant contributions.”

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Section 2.30, Pooled Health Plan	
Comment	One commentator suggested several changes to improve the clarity of the definition.
Response	The reviewers agree with some of the proposed changes, disagree with others, and made further changes to improve clarity.
Comment	One commentator suggested replacing “health care cost trend rate assumption” with “health care trend assumption.”
Response	The reviewers disagree, noting that including the words “cost” and “rate” help improve the clarity, and made no change.
Section 2.32, Premium	
Comment	One commentator noted that the “definition of premium as a price incorporates the idea of premium as a rate” and so suggested that throughout the standard the word “premium” be used instead of “premium rate.”
Response	The reviewers agree with the suggestion and made the proposed change throughout the standard.
Section 2.37, Spread Gain Actuarial Cost Method	
Comment	One commentator questioned the need to define this term.
Response	The reviewers note that it was included because of the disclosure requirements concerning “funded status” and to be consistent with ASOP No. 4, and made no change.
Section 2.40, Trend	
Comment	One commentator suggested that the definition not include the word “expected” because trend can also refer to a past change in payment levels. The commentator suggested other related changes.
Response	The reviewers agree with the suggestion of deleting the word “expected” but made no other changes.
Comment	One commentator suggested that based on the definition of “trend,” in the phrase “trend rate,” the word “rate” was redundant and should be deleted throughout the standard.
Response	The reviewers believe that including the word “rate” after “trend” improves the clarity of the guidance and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.3, Purpose of Measurement	
Comment	One commentator suggested that projections of benefit payments be included in the list of examples.
Response	The reviewers note that the list of examples is not intended to be exhaustive and is similar to the list included in ASOP No. 4. The reviewers, therefore, made no change.
Section 3.3.3, Risk or Uncertainty	
Comment	One commentator noted that ASOP No. 41, <i>Actuarial Communications</i> , refers to “Uncertainty or Risk” and suggested that the heading of this section be changed accordingly. The commentator also questioned this section’s inclusion given the guidance in ASOP No. 41.
Response	The reviewers agree with the proposed change in the heading of the section. They note that considering the uncertainty or risk inherent in a measurement for retiree group benefit purposes is important and the reinforcement of the guidance provided in ASOP No. 41 would be useful to the actuary and retained this section.

Section 3.4.1, Information as of a Different Date	
Comment	One commentator felt that this guidance is redundant since the actuary was required in other parts of the standard to make appropriate adjustments. The commentator also felt that this section could be moved to section 3.24 on Roll-Forward Techniques.
Response	The reviewers considered the comments and concluded that the placement of the guidance in this section was appropriate in the sequence of items that an actuary should consider in measuring obligations, periodic costs, or actuarially determined contributions, since data may be as of different dates within a valuation year. Also, section 3.24 provides guidance on adjusting results to future valuation dates. Therefore, no change was made.
Section 3.5.1(d), Participant Contributions	
Comment	One commentator questioned whether a “participating dependent” was included or not.
Response	The reviewers note that the definition of “participants” has been modified to make it clear that it includes “participating dependents,” and, therefore, made no change to the definition of “participant contributions.”
Section 3.5.1(d)(2), Participant Postretirement Contribution Reasonableness	
Comment	One commentator suggested that the concept of “implicit subsidy” could be introduced here.
Response	The reviewers believe that the concept of “implicit subsidy” is commonly understood and applies in other parts of the standard as well, and made no change.
Section 3.5.1(d)(3), Preretirement Active Employee Contributions	
Comment	One commentator opined that the distinction among the different types of contributions could be clarified.
Response	The reviewers believe that the difference between pre-retirement active employee contributions and other types of contributions is sufficiently clear, and made no change.
Section 3.5.1(d)(4), Participant Contributions as Defined by Limits on Plan Sponsor Costs	
Comment	Several commentators suggested changes in this section to make it clearer.
Response	The reviewers agree and revised this section to make the guidance clearer.
Section 3.5.1(e), Payments from Other Sources	
Comment	One commentator asked for clarification on the guidance provided in this section.
Response	The reviewers modified the language to make the guidance clearer.
Section 3.5.1(f), Health Care Delivery System Attributes	
Comment	One commentator suggested that the considerations implied by the example might place an unrealistic burden on the actuary and asked for clarification.
Response	The reviewers agree that the example might mislead users of the standard and, therefore, deleted it.

Section 3.5.1(g), Benefit Options	
Comment	One commentator noted that the language might be unduly restrictive for several reasons, including a) new benefit options might reduce participant contributions or periodic costs as well as increase them, and b) the actuary may want to consider the effect of benefit options on participants' behavior and adverse selection.
Response	The reviewers agree and deleted the relevant language to address the concerns raised by the commentator.
Section 3.5.1(h), Anticipated Future Changes	
Comment	One commentator suggested changing the phrasing “the actuary should consider only changes...” The commentator also thought that the last sentence cross-referencing the disclosure requirement was redundant.
Response	The reviewers agree that “should consider” is not the appropriate language to use in this situation and revised it to “should reflect.” To be consistent, later in the section the language “may take into account” was revised to “may reflect.” The reviewers believe that reinforcing the disclosure requirement in this section is particularly important in this circumstance and left the cross-reference to the disclosure requirements in the standard.
Section 3.5.2(b), Patterns of Plan Changes	
Comment	One commentator suggested that changes similar to those recommended in section 3.5.1(d)(4) be made in this section.
Response	The reviewers agree and made those changes.
Section 3.5.2(c), Governmental Programs	
Comment	One commentator thought that the use of “historically enacted” in this section seems to suggest that the actuary has to anticipate more legislative or administrative policy changes based on history and recommended that the section be deleted or clarified.
Response	The reviewers added language to clarify the intent that this section applies to patterns of changes consistent with section 3.5.2(b).
Section 3.5.3, Reviewing the Modeled Retiree Group Benefits Program	
Comment	One commentator felt that it was inappropriate for the responsibility to determine whether the deviation was temporary or permanent to be with the actuary. The commentator recommended that the standard should require the actuary to discuss the actuary’s finding of deviation with the plan sponsor to seek guidance concerning the deviation.
Response	The reviewers note that nothing in the standard precludes the actuary from talking to the plan sponsor and gathering more information to make this determination and that guidance regarding administrative inconsistencies is provided in section 3.10. The reviewers, therefore, made no change.

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Section 3.6, Modeling the Covered Population	
Comment	One commentator felt that the “access only” situation should be mentioned in the standard and that guidance is needed on whether there is a responsibility to determine whether the participant is in fact paying for the entire value of the benefits received.
Response	The reviewers believe that there is sufficient guidance in the standard to cover an “access-only” situation and made no change.
Section 3.6.1, Census Data	
Comment	One commentator suggested that the language in this section be revised to be more consistent with the language in section 3.12.3(a) and other places in the standard.
Response	The reviewers agree and modified the language to be more consistent.
Section 3.6.4, Dependents and Surviving Dependents of Participants	
Comment	Several commentators suggested changes in the language in this section regarding “dependents.”
Response	The reviewers revised the language in this section to clarify the intent and make it more consistent with the use in other parts of the standard.
Comment	One commentator thought that the first sentence of the second paragraph was redundant because the first paragraph refers to spouses and surviving spouses.
Response	The reviewers note that the first paragraph provides general guidance on the treatment of all dependents, both spouses and dependent children while the first sentence of the second paragraph provides specific guidance on the treatment of spouses and the second sentence of that paragraph provides specific guidance on the treatment of dependent children. The reviewers, therefore, made no change.
Section 3.6.6, Use of Grouping	
Comment	One commentator suggested revising the disclosure requirement to “...should consider disclosing, if significant....”
Response	The reviewers believe it is important to disclose the specifics regarding the combining of health plans and grouping of populations so that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the combining and grouping. They also note that, as provided for in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , the standards do not apply to items that are immaterial. Therefore, no change was made.
Section 3.6.7, Hypothetical Data	
Comment	One commentator suggested that several examples could be added to this section.
Response	The reviewers believe that examples are not needed and made no change.

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Section 3.7, Modeling Initial Per Capita Health Care Costs	
Comment	One commentator thought there was the potential of confusion with the use of the word “cost” and suggested changing the phrase to “per capita health care rates.”
Response	The reviewers note that “per capita health care costs” is a well-understood term among actuaries in this area and that “costs” is used consistently throughout the standard and understood in that context. They further note that “periodic cost” is now a defined term in both ASOP Nos. 4 and 6, and usually refers to accounting expense. As a result, the reviewers made no change.
Section 3.7.1(a), Paid Claims	
Comment	One commentator suggested changing “should analyze” to “should consider analyzing” for several reasons including the fact that the data available may not be sufficient for analysis.
Response	The reviewers agree and made the change.
Section 3.7.4, Credibility	
Comment	One commentator noted that this section does not provide a threshold definition other than “fully credible” and expressed concern that references to ASOP No. 25, <i>Credibility Procedures</i> , may need to change depending on the final version of that standard.
Response	The reviewers note that “full credibility” is defined in ASOP No. 25, and made no change.
Section 3.7.6, Impact of Medicare and Other Offsets	
Comment	One commentator suggested replacing the phrase “health plan” by “retiree group benefits program” or “benefit plan.”
Response	The reviewers agree and replaced the phrase “health plan” by “benefit plan.”
Comment	One commentator noted that the guidance regarding other offsets doesn’t pertain to Medicare and might be better if located differently.
Response	The reviewers agree and included the guidance regarding other offsets in a separate paragraph at the end of the section.
Comment	One commentator suggested changing the phrase “should be aware” to “should consider” in the paragraph concerning changes in Medicare. In addition, the commentator noted that it was not the magnitude of the changes in Medicare programs but the impact that those changes had on the retiree group benefits program that was important for purposes of the standard.
Response	The reviewers agree and made changes to reflect these considerations.
Section 3.7.7, Age-Specific Costs	
Comment	One commentator suggested moving some of the guidance included in section 3.7.8, Pooled Health Plans (Including Community-Rated Plans), into this section as it applied in general and not just to those types of plans.
Response	The reviewers agree and combined sections 3.7.7 and 3.7.8 into one section. The general guidance that had been included in sections 3.7.7 and 3.7.8 is now in the new section 3.7.7(a).

Section 3.7.8, Pooled Health Plans (including Community Rated Plans)	
Comment	Several commentators suggested that individual circumstances needed to be taken into account in determining whether the pooled health plan's premium would be appropriate for use without adjustment for age.
Response	The reviewers agree that it would be appropriate to provide more guidance regarding the limited circumstances for using unadjusted premium rates. As noted earlier, sections 3.7.7 and 3.7.8 were combined into one section. The new section 3.7.7(c) clarifies the guidance regarding the limited circumstances for using unadjusted premium rates.
Comment	Several commentators suggested that in cases where the cost of coverage is borne by a large independent community, the use of an unadjusted premium should be allowed if the aging or demographic distribution of the individual employer's population would not affect the program's premiums, such as for many small public sector plans.
Response	The reviewers believe that implicit subsidies do exist within pooled health plans and that such subsidies should be recognized in valuations of retiree group benefits by incorporating age-specific costs in the measurement, except in some very limited cases. Thus the reviewers believe that the use of age-specific costs will generally result in a more appropriate representation of the employer's long term liabilities for retirees than the use of unadjusted premiums. They point out that there is no guarantee that the current premium structure or the pooled health plan will continue over the long term nor that the employer will continue or be allowed to continue in the pool and that the value of employer's benefit commitment independent of the method used to provide that benefit is the most appropriate basis for valuing the liability, except in some very limited cases. Accordingly, the reviewers added more guidance throughout section 3.7.7, which now also includes the guidance contained in section 3.7.8 of the second exposure draft.
Comment	Several commentators were concerned that by using age-specific costs for groups participating in a pooled health plan: <ul style="list-style-type: none"> • accounting liabilities could be too large considering the cash flows; and • the liability might not be defeased by contributions/expenses when all assumptions were met.
Response	The reviewers agree that year-to-year differences between cash flows/contributions based on premium and age-specific costs may occur, but believe that it is appropriate to measure the employer's long term benefit obligation based on a projection of age-specific costs. As noted previously, the reviewers clarified the guidance, including a description of factors that the actuary should consider in determining whether the use of the premium may be appropriate without regard to adjustments for age.
Comment	Several commentators agreed with the use of age-specific costs, but suggested that the standard should state explicitly that an adjustment be made to recognize in the liability calculation the age-specific subsidies (both positive and negative) from other employers, and that if this were not done the liability would be either too large or too small depending on the average age of the group relative to that of the pool.
Response	The reviewers note that all employers participating in a pooled health plan share in the collective risks and costs (some positive and some negative). As such, the reviewers believe developing a set of age-specific costs based on the total pooled health plan to measure retiree health benefits for any and all participating employers is appropriate, except in very limited circumstances as set forth in the standard. In other words, absent evidence to the contrary, the reviewers do not believe that non-guaranteed subsidies should be assumed to persist indefinitely. The reviewers, therefore, made no change.

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Comment	Several commentators suggested that information would not be available to make an accurate determination of a pooled health plan's age-specific costs.
Response	The reviewers believe that either sufficient information will be available or reasonable assumptions and approximations can be developed for the actuary to make a reasonable determination of the pooled health plan's age-specific costs. The reviewers, therefore, made no change.
Comment	One commentator suggested several clarifications in the guidance regarding what the actuary should do if a distribution table for the pooled health plan is not available.
Response	The reviewers agree that the intent of the guidance was not clear and revised this language to clarify that the actuary may either make a reasonable assumption regarding the distribution or base the age-specific costs on manual rates or other sources.
Comment	One commentator suggested the standard be more explicit in encouraging the use of the individual group's own demographic distribution in developing the age-specific costs for those groups taking part in a pooled health plan.
Response	The reviewers note that pooled plans develop premiums in a wide variety of ways. The reviewers recognize that some pooled health plans charge participating groups premiums that are explicitly based in part on the composition of the given employer (whether influenced by claims or age distribution or another factor). The guidance provides that, to the extent appropriate, the composition of the group being valued should be taken into account when developing and applying age-specific costs. The reviewers, therefore, made no change.
Comment	One commentator suggested that several areas of guidance included in section 3.7.8 are more general in nature than indicated by the title of that section and might be more appropriate in section 3.7.7.
Response	The reviewers agree and, as noted earlier, combined sections 3.7.7 and 3.7.8, expanded the guidance in section 3.7.7(a) to cover certain points raised by the commentator, and removed the corresponding guidance from section 3.7.7(b).
Comment	One commentator suggested that, in the second paragraph of section 3.7.8, the term "premium equivalent" be replaced with "premium" and questioned why there was no reference to self-insured plans in that context.
Response	The reviewers agree and replaced the phrase "premium equivalent" with "premiums." The reviewers note that the phrase "claims costs" covers the situation of a self-insured plan and, therefore, no reference is needed.
Comment	One commentator suggested that, in the third paragraph of section 3.7.8, the phrase "distribution table for" be replaced with "age distribution of."
Response	The reviewers made no changes to the references to distribution tables because they believe the actuary should have the option of using distribution tables by both age and gender.
Comment	One commentator felt that the example in section 3.7.8 regarding Medicare Advantage Plans was confusing. The commentator noted that although for a Medicare Advantage plan itself the use of the premium without regard to adjustments for age could be appropriate, for a Medicare Advantage-Prescription Drug ("MA-PD") program the prescription drug portion of the benefits should be adjusted for age.
Response	The reviewers agree the example could be confusing and deleted it.

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Comment	One commentator suggested that comments regarding this section made after the first exposure draft were not carefully reviewed.
Response	The Retiree Group Benefits Subcommittee, the Pension Committee, and the ASB carefully considered the comments made after the first exposure draft and took the comments into consideration when preparing the second exposure draft.
Comment	One commentator suggested that the reviewers' rationale for decisions regarding section 3.7.8 comments be more fully explained.
Response	Responses to commentators' exposure draft comments are meant to be brief in nature but to capture the essence of the issue and the decisions made. The reviewers have included more detailed responses in this section of the appendix to provide more context for the guidance in the final ASOP.
Comment	One commentator suggested that the guidance was not in any way reflective of the environment in which actuaries work.
Response	The members of the subcommittee regularly practice in, and drafted the guidance to reflect, all areas of retiree group benefits, including: public sector plans; private sector plans; funded and unfunded plans; small and large plans; and small employers and large employers. The guidance reflects the fact that there can be a number of different purposes of the measurement, including, but not limited to, funding and accounting requirements.
Section 3.7.10(b), Enrollment Practices	
Comment	One commentator suggested that instead of the general word "effect" in the phrase "effect... have had on health care practices," the standard should specify what types of effects the actuary should consider, such as adverse selection.
Response	The reviewers believe that the items that the actuary should consider should not be limited to adverse selection, as there could be other effects depending on the circumstances of the retiree group benefits program, and made no change.
Section 3.7.12, Adjustment for Trend	
Comment	One commentator recommended that the language regarding the basis for the adjustments for trend should require the actuary to take into account experience from outside the health plan.
Response	The reviewers note that in some situations it may be appropriate to consider only the experience of the health plan and made no change.
Section 3.7.15, Administrative Expenses	
Comment	One commentator noted that there are other expenses such as PPO access fees and stop-loss premiums and suggested that this section should also make reference to other non-administrative expenses.
Response	The reviewers agree, and made changes to the section heading and throughout the section.

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Section 3.11, Other Information from the Principal	
Comment	One commentator questioned the inclusion of this section and indicated that “accounting election” is unclear.
Response	The reviewers believe the guidance in this section has relevance to several other sections and therefore included it in its own section. The reviewers made edits to clarify the language.
Section 3.12.1, Economic Assumptions	
Comment	One commentator noted that part of the reference to an accounting standard was missing.
Response	The reviewers agree and corrected the reference.
Section 3.12.1(a), Health Care Cost Trend Rate	
Comment	One commentator recommended that the paragraph be revised to account for the common usage of the SOA-Getzen model.
Response	The reviewers believe that the guidance is consistent with the use of the SOA-Getzen model but believe that the standard should not mandate a specific model and, therefore, did not include a reference to it in the guidance.
Comment	One commentator suggested revising the guidance regarding the select period, noting that there may be times when health care cost trend rates could reasonably be expected to increase for a short period of time before declining.
Response	The reviewers agree and revised the language to make it clearer that the trend rates could increase during the select period.
Comment	One commentator suggested moving the sentence regarding the development of an initial trend assumption from the third paragraph to the beginning of the second paragraph so that it would be before the guidance on selecting the long-term trend assumption.
Response	The reviewers agree and made the proposed change.
Comment	One commentator suggested deleting the words “cost” and “rate” in this section.
Response	The reviewers believe that including those words provide clarity and left them in the standard. The reviewers did change the word “rate” to “rates” to reflect the fact that there generally is not one trend rate.
Comment	One commentator suggested changing “the appropriate length of a select period” to “an appropriate length...” to avoid implying that there is one and only one length that the actuary could use.
Response	The reviewers agree and revised the section.
Comment	One commentator felt that “relevant long-term economic factors” may not clarify whether the projections are those of the actuary, of those who are responsible for the retiree group benefit program, or of other sources such as national agencies and suggested that additional guidance be provided.
Response	The reviewers believe the guidance provided is sufficiently clear and made no change.

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Comment	One commentator felt that the sentence, “The actuary should select a transition pattern and select period that reasonably reflects anticipated experience,” was redundant and should be deleted. The commentator also felt that asking an actuary to choose a select period that reasonably reflects anticipated experience goes beyond what should be expected from a trend assumption that may exceed 50 years.
Response	The reviewers disagree and made no change, believing that the sentence is not redundant and it is reasonable to require the actuary to consider what is likely to happen to trend over the long term.
Comment	One commentator suggested moving the entire economic section of ASOP No. 6 to ASOP No. 27, <i>Selection of Economic Assumptions for Measuring Pension Obligations</i> .
Response	The reviewers feel that including this guidance in the standard is useful and more convenient to the actuary working in this practice area as the economic assumptions applied can have consequences for the demographic assumptions used (for example, enrollment assumption) and made no changes.
Comment	One commentator suggested that the sentence regarding annual or lifetime maximums might be more appropriate in the section dealing with the modeling of plan provisions and suggested moving to section 3.5.1(c).
Response	The reviewers agree that guidance regarding annual or lifetime maximums would be more appropriate in section 3.5.1(c) and expanded the guidance in that section to cover annual and lifetime maximums.
Section 3.12.1(b), Other Cost Change Rates	
Comment	One commentator noted that section 2.9 references “long-term care” but not “long-term care insurance” and suggested deleting the word “insurance.”
Response	The reviewers note that these are examples of types of benefits that may be affected by other economic factors and made no change.
Section 3.12.1(c), Participant Contribution Changes	
Comment	One commentator felt that this language may be construed as applying only to situations in which a cap on benefits has not yet been placed and suggested adding: “In cases in which a plan has a cap on benefits already in place, the actuary should consider modeling participant contributions based on the provisions of the Retiree Group Benefits Program and on communications to participants which describe application of the cap.”
Response	The reviewers believe that the situation described by the commentator is covered by the first sentence of this section and made no change.
Section 3.12.1(d), Adverse Selection	
Comment	One commentator noted that “adverse selection” is not a “process” and that the word can be deleted, particularly since adverse selection is a defined term.
Response	The reviewers agree and made the change.
Section 3.12.2(d), Mortality	
Comment	One commentator made suggestions on revising the language in this section to discuss the interaction with trend rates.
Response	The reviewers believe that the language is sufficiently clear and made no change to reference the effect of trend rates. They did clarify the language to reference death benefits in addition to health care costs.

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Section 3.12.3(b), Dependent Coverage	
Comment	One commentator suggested adding the word “materially” in connection with the guidance concerning the gender mix of participants.
Response	The reviewers note that ASOP No. 1 states that the guidance in ASOPs need not be applied to immaterial items and made no change.
Section 3.12.4, Effect of Retiree Group Benefits Program Design Changes on Assumptions	
Comment	One commentator suggested several changes to and a reordering of the language in the second paragraph of this section.
Response	The reviewers believe that the language is sufficiently clear as written and made no change.
Sections 3.14, Measuring the Value of Accrued or Vested Benefits	
Comment	One commentator suggested deleting this section as this type of calculation is not common for these types of valuations.
Response	The reviewers agree that the measurement of accrued or vested benefits is less common for these valuations than for pensions but note that the guidance is useful for those situations in which such a calculation is required and did not delete the section.
Comment	One commentator suggested that more guidance be provided and proposed several text edits, including moving 3.14(e), “whether or the extent to which any retiree group benefits are accrued or vested” to the introductory paragraph of 3.14.
Response	The reviewers believe that the level of guidance is appropriate and did not add more guidance. The reviewers did reorder the list of items that the actuary should consider. The reviewers added language to the section that indicates that in many situations these benefits are neither vested nor accrued. The reviewers did not make any other of the proposed changes.
Comment	Several commentators suggested deleting references in the section to “accrued or vested” as many retiree group benefit programs do not define these terms. One commentator suggested adding a paragraph describing how “the meaning of accrued or vested as defined by plan sponsors and their legal counsel” might “differ from the meanings used by the actuarial community.”
Response	The reviewers note that the guidance in this situation applies only where the scope of the assignment requires an actuary to do this type of calculation and that many factors might determine whether benefits are considered accrued or vested, including the purpose of the measurement. They believe that the language provides the appropriate balance between guidance and flexibility for the actuary to deal with specific situations and, therefore, made no change.
Comment	One commentator suggested adding “employment contracts” after the reference to plan provisions.
Response	The reviewers note that the guidance in section 3.5 discusses the identification of the relevant plan provisions and feel that the language in that section is broad enough to include employment contracts. Therefore, the reviewers made no change.
Section 3.14(g), Measuring the Value of Accrued or Vested Benefits	
Comment	One commentator suggested adding “changes in retiree group benefits eligibility” to the list in this section.
Response	The reviewers note that the list in this section gives examples of factors for the actuary to consider and is not intended to be exhaustive, and made no change.

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Section 3.15, Market-Consistent Present Values	
Comment	One commentator suggested that the phrase “benefits earned” be changed to something else as “benefits earned” is not defined.
Response	The reviewers note that depending on the purpose of the measurement the definition of “benefits earned” could vary, and made no change.
Section 3.17, Actuarial Cost Method	
Comment	In response to the question asked in the transmittal letter to the second exposure draft, several commentators indicated that the description of an actuarial cost method in the second exposure draft of ASOP No. 4 was preferable to that included in the second exposure draft of ASOP No. 6, while one commentator preferred the version in the second exposure draft of ASOP No. 6.
Response	The reviewers concluded that ASOP Nos. 4 and 6 should use the same definition of a reasonable actuarial cost method and revised the guidance to be consistent with that included in the revised version of ASOP No. 4.
Section 3.18, Allocation Procedure	
Comment	One commentator expressed the opinion that the requirement to consider relevant input received from the principal was inconsistent with the paragraph in section 1.2 indicating that the standard “does not require the actuary to evaluate the ability of the plan sponsor to make prefunding contributions to the plan when due.”
Response	The reviewers disagree and made no change.
Comment	One commentator suggested that the term “principal” be replaced by “plan sponsor.”
Response	The reviewers note that “principal” is defined in ASOP No. 1 and is more appropriate in this context than “plan sponsor.” Therefore, no change was made.
Comment	One commentator said that section 3.18.1 and 3.18.2 appear to presuppose that the objective of prefunding contributions is to accumulate assets sufficient to pay future benefits. The commentator noted that that may not be the plan sponsor’s objective and expressed the opinion that it would not be necessary for the actuary to perform the analysis described. The commentator suggested alternative language to the section and the disclosure requirements.
Response	The reviewers believe that the analysis required of a contribution allocation procedure and the related disclosure requirements concerning the funding of the retiree group benefits program are appropriate and made no change.
Sections 3.20, Volatility	
Comment	One commentator suggested adding a reference to the initial per capita health care costs as a source of possible volatility, noting that there can be significant changes from one year to the next.
Response	The reviewers agree and expanded the example of changes in assumptions to include initial per capita health care costs.
Comment	One commentator suggested adding a disclosure of the rationale for the range selected in assumptions for the purpose of analyzing the potential volatility of the results.
Purpose	The reviewers believe that the disclosure requirements are sufficient and made no change.

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Sections 3.21, Reasonableness of Results	
Comment	One commentator noted that a similar section is not included in ASOP No. 4 and questioned its inclusion in ASOP No. 6.
Response	In light of the varied and complex assumptions unique to retiree group benefit valuations, the reviewers believe that requiring this analysis for reasonableness is appropriate and made no change.
Comment	One commentator suggested that the actuary should document the likely causes of the differences identified in this analysis.
Response	The reviewers revised the language in this section, including adding that the actuary “should consider documenting, if appropriate, the likely causes of such differences.”
Section 3.22.3, Inability to Evaluate Prescribed Assumption or Method	
Comment	One commentator asked if this section would allow an actuary to avoid calculating age-adjusted claims costs for a pooled plan because to do such analysis would require “performing a substantial amount of additional work beyond the scope of the assignment?”
Response	The reviewers do not believe that age-adjusted claims costs for pooled plans are prescribed assumptions or methods set by another party and, therefore, made no change
Sections 3.23, Reliance on a Collaborating Actuary	
Comment	One commentator asked if all signing actuaries are responsible for the entire report, including areas in which the actuary may have limited expertise or if the intended meaning is that one principal signing actuary is responsible for the entire report and, if the latter, if language can be added to that effect.
Response	The reviewers note that this section is consistent with section 2.4, Statements of Actuarial Opinion Issued by More than One Actuary, of the “Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States” and made no change.
Comment	One commentator suggested deleting the word “analysis” in the phrase “overall appropriateness of the analysis, assumptions, and results” because some of that analysis may never be communicated in the statement of actuarial opinion.
Response	The reviewers believe that even though the analysis may not be communicated in the statement of actuarial opinion, the actuary is still responsible for it and, therefore, made no change.

Section 3.24, Use of Roll-Forward Techniques	
Comment	One commentator expressed the opinion that roll-forward valuations should not be encouraged in actuarial standards and that the requirements regarding the use of these techniques should be revised.
Response	The reviewers believe that the guidance included in this section is appropriate for measurements regarding retiree group benefits programs. They note that the guidance provides that “the actuary should not use roll-forward techniques unless, in the actuary’s professional judgment at the time of the roll-forward calculation, the resulting measurement is not expected to differ significantly from the results of a new full measurement.” The reviewers made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1(g), Communication Requirements	
Comment	One commentator suggested that a requirement be added that the actuary comment about the source of any hypothetical data and whether the use of such data is expected to have a significant impact. The commentator discussed the differences between, for example, assuming dates of hire for a small percentage of the population versus assuming the demographics of the population making up a pooled plan.
Response	The reviewers believe that the issue of missing dates of hire is adequately covered by the existing section 4.1(g) and that section 4.1(i) requires disclosure of the information and analysis used in developing the age-related costs for a pooled plan. The reviewers, therefore, made no change.
Section 4.1(i), Communication Requirements	
Comment	One commentator suggested changes in the text in this disclosure requirement regarding the information and analysis used in selecting each significant assumption that was not prescribed.
Response	The reviewers note that the language in this section parallels the language in the similar disclosure requirement in ASOP No. 27. The reviewers modified the language to clarify that when age-specific costs are not used, a description of the reasons why they are not used is a part of this disclosure.
Section 4.1(k), Communication Requirements	
Comment	One commentator suggested adding references to adverse selection and plan selection/migration to the list of other significant assumptions.
Response	The reviewers note that the parenthetical list is not intended to be exhaustive and made no change.
Section 4.1(s), Communication Requirements	
Comment	One commentator asked whether this disclosure requirement applied to a calculation of the maximum deductible contribution to a voluntary employees’ beneficiary association using the aggregate cost method.
Response	The reviewers note that this disclosure requirement does not apply to intermediate steps of a calculation but added language to clarify that it does not apply if the purpose of the calculation was contribution determination in accordance with federal law or regulation.
Comment	Several commentators expressed concern about the added disclosure requirements regarding “fully funded” and “funded status.”
Response	The reviewers agree with concerns regarding “fully funded” and removed the proposed disclosures regarding such statements. However, the reviewers retained and modified the language of this section regarding measurements of funded status. The modified language makes it clearer that the standard does not require the disclosure of “funded status,” only what is required if an actuary does

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	disclose a plan’s “funded status.”
APPENDIX 1	
Comment	Several commentators suggested changes in the text.
Response	The reviewers made some changes to the text, taking into account the comments received, the changes in the defined terms used in the standard, and updated cost levels.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 7**

**Analysis of Life, Health, or Property/Casualty
Insurer Cash Flows**

Revised Edition

**Developed by the
Cash Flow Testing Task Force of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2002**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 128)

T A B L E O F C O N T E N T S

Transmittal Memorandum

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June 2002

TO: Members of the American Academy of Actuaries and Other Persons Interested in the Analysis of Life, Health, or Property/Casualty Insurer Cash Flows

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 7

This booklet contains the final version of ASOP No. 7. The original title, *Performing Cash Flow Testing for Insurers*, has been changed to *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*. This standard, along with a revision of ASOP No. 22, now titled *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*, supersedes ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, which has been repealed effective April 15, 2002.

Background

Development of actuarial standards of practice in the cash flow testing area was originally undertaken separately for the life and health and the property and casualty specialties. The first to be published was ASOP No. 7, *Concerning Cash Flow Testing for Life and Health Insurance Companies*. This was developed by the American Academy of Actuaries' Committee on Life Insurance Financial Reporting in conjunction with the Life Committee of the ASB, and was adopted by the ASB in October 1988.

Subsequently, the Casualty Committee of the ASB, through its Valuation Subcommittee, developed a proposed standard titled *Cash Flow Testing for Property and Casualty Insurers*. This draft was presented to the ASB in April 1990. The ASB decided that the document should be revised so that there would be one broad standard that would apply to life and health insurers as well as to property/casualty (P/C) insurers. A Joint Casualty/Life Cash Flow Testing Task Force was appointed by the ASB to accomplish this. The resulting standard was adopted in July 1991.

Further revisions to ASOP No. 7 are now being made for several reasons. First, practice in this area has evolved and this proposed revised standard reflects this evolution. Second, the National Association of Insurance Commissioners (NAIC) adopted two new model regulations, *Synthetic Guaranteed Investment Contracts Model Regulation*, and *Separate Accounts Funding Guaranteed Minimum Benefits Under Group Contracts Model Regulation*. These two model regulations contain language requiring that life insurers submit an actuarial opinion and memorandum

related to cash flow testing. Finally, the ASB has adopted a new format for standards, and this standard has been rewritten to conform to that new format.

In addition to ASOP No. 7, as part of the project to look at all cash flow testing standards of practice, ASOP No. 14 and ASOP No. 22 were also reviewed. Relevant portions of ASOP No. 14 were incorporated within the 2001 revisions of ASOP No. 7 and ASOP No. 22.

At its September 2001 meeting, the ASB voted to adopt the revised ASOP No. 7 and ASOP No. 22 and to repeal ASOP No. 14. In April 2002, the ASB voted to defer the effective date of ASOP No. 7 to July 15, 2002 while it reviewed concerns raised by the Academy's Casualty Practice Council regarding the standard's applicability to property/casualty practice. At its June 2002 meeting, the ASB amended the scope to conform to generally accepted casualty actuarial practice. Please see appendix 3 for further information.

Exposure Draft

The exposure draft of this revised standard was issued in September 2000 with a comment deadline of March 31, 2001. The Cash Flow Testing Task Force carefully considered the twenty-one comment letters received. For a summary of the substantive issues contained in these comment letters, please see appendix 2.

The most significant changes from the exposure draft were as follows:

1. In section 3.10.1, Scenarios, and 3.10.3, Internal Consistency, a few changes were made for similar reasons to both sections to clarify the actuary's responsibilities. In 3.10.1(a), the actuary is now required to determine whether the tested scenarios reflect a range of conditions consistent with the purpose of the cash flows, and, if not, the actuary should disclose any material inconsistency in any report or communication. Similarly, in 3.10.3, the actuary is now required to determine whether the actuarial assumptions within each scenario are consistent where appropriate, and, if not, the actuary should disclose any material inconsistency in any report or other communication.
2. In section 3.10.2, Sensitivity Testing, a sentence was added noting that the further into the future that asset and policy cash flows are projected, the more potential there is for variability in future cash flows.
3. In section 4.3, Documentation, wording was added noting that the degree of documentation of the actuary's cash flow analysis will vary with the complexity and purpose of the job.

The task force thanks all those who commented on the exposure draft. The task force also thanks Susan Witcraft for her assistance in drafting this standard.

The ASB voted in June 2002 to adopt this standard.

Cash Flow Testing Task Force

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ACTUARIAL STANDARD OF PRACTICE NO. 7

ANALYSIS OF LIFE, HEALTH, OR PROPERTY/CASUALTY INSURER CASH FLOWS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries who perform professional services involving the analysis of asset, policy, or other liability cash flows for life, health, or property/casualty insurers.
- 1.2 **Scope**—This standard applies to actuaries when performing the analysis of part or all of an insurer's asset, policy, or other liability cash flows for life or health insurers (including health benefit plans). The standard also applies to actuaries when performing the analysis of cash flows involving both invested assets and liabilities for property/casualty insurers.

Cash flow analysis subject to this standard should be considered in connection with professional services such as the following:

- a. determination of reserve adequacy;
- b. determination of capital adequacy;
- c. product development or ratemaking studies;
- d. evaluations of investment strategy;
- e. financial projections or forecasts;
- f. actuarial appraisals; and
- g. testing of future charges or benefits that may vary at the discretion of the insurer (for example, policyholder dividend scales and other nonguaranteed elements of the insurer's liabilities).

This standard does not apply to actuaries when performing cash flow analysis for entities other than life, health, or property/casualty insurers, such as pension plans, retiree group

benefit plans, or social insurance programs.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard of practice is effective for actuarial work performed after July 15, 2002.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Applicable Law**—Federal, state, and local statutes, regulations, case law, and other binding authority that may govern analysis of insurer cash flows.
- 2.2 **Asset**—Any resource that can generate revenue or reduce disbursement cash flows.
- 2.3 **Asset Risk**—The risk that the amount or timing of items of cash flow connected with assets will differ from expectations or assumptions for reasons other than a change in investment rates of return. Asset risk includes delayed collectibility, default, or other financial nonperformance. This has been commonly referred to in actuarial literature as the *C-I risk* or *credit risk*.
- 2.4 **Cash Flow**—Any receipt, disbursement, or transfer of cash.
- 2.5 **Cash Flow Analysis**—Any evaluation of the risks associated with the timing or amount of cash flows.
- 2.6 **Cash Flow Testing**—A form of cash flow analysis involving the projection and comparison of the timing and amount of cash flows resulting from economic and other assumptions.

- 2.7 **Derivative Contract**—Any security that derives its value from an underlying financial instrument. Examples include interest rate swaps, futures, and options.
- 2.8 **Health Benefit Plan**—A contract providing medical, dental, vision, disability income, accidental death and dismemberment, long-term care, and similar benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the risk-bearing organization, including benefit plans provided by self-insured plan sponsors.
- 2.9 **Insurer**—An entity that accepts the risk of financial losses or, for a specified time period, guarantees stated benefits upon the occurrence of specific contingent events, in exchange for a monetary consideration.
- 2.10 **Investment Rate-of-Return Risk**—The risk that investment rates of return will differ from expectations or assumptions, causing a change in the amount or timing of asset, policy, or other liability cash flows. This has been commonly referred to in actuarial literature as the *C-3 risk* or *asset/liability mismatch risk*.
- 2.11 **Liability**—Any commitment by, or requirement of, an insurer that can reduce revenue or generate disbursement cash flows.
- 2.12 **Notional Asset Portfolio**—A portfolio of assets, not owned by the insurer, which changes the risk characteristics of either the assets or the liabilities of the insurer.
- 2.13 **Other Liability Cash Flows**—Cash flows not specifically associated with asset or policy cash flows. Examples are corporate expenses, payables, surplus notes, shareholder dividends, or balance sheet items that result from litigation.
- 2.14 **Policy Cash Flow Risk**—The risk that the amount or timing of cash flows under a policy or contract will differ from expectations or assumptions for reasons other than a change in investment rates of return or a change in asset cash flows. This has been commonly referred to in actuarial literature as the *C-2 risk*.
- 2.15 **Policy Cash Flows**—All premiums and other amounts paid by policyholders or contract holders to the insurer and all benefits, expenses, and other amounts paid to policyholders or others as required by policy or law.
- 2.16 **Scenario**—A set of economic and other assumptions used in performing cash flow analysis.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Analysis of Insurer Cash Flows**—The actuary may perform the analysis of part or all of an insurer’s asset (including off-balance sheet asset), policy, or other liability cash flows.
- 3.2 **Determining the Level of Analysis of Cash Flows**—In deciding the level of analysis of insurer cash flows, if any, appropriate for the circumstances, the actuary should consider the type of asset, policy, or other liability cash flows and the severity of risks associated with those cash flows. As part of that consideration, the actuary should consider those risks and options embedded in the asset, policy, or other liability cash flows that the actuary judges to be material. In addition, the actuary should consider the risks that are being undertaken and determine what types of deviations from expected experience should be taken into account, if any, given the purpose of the analysis.
- 3.2.1 **Reasons for Cash Flow Testing**—The actuary should consider cash flow testing when variations in the underlying risks are likely to have a material impact on the expected cash flows in certain products, certain lines of business, or on the company. Situations that might indicate a need for cash flow testing include the following:
- a. where there are material asset risks (for example, below investment grade bonds, assets with payment timing risks such as CMOs or mortgage-backed securities, mortgages concentrated in certain regions of the country, and large illiquid assets such as real estate);
 - b. where there are liabilities that have cash flows far out into the future (for example, structured settlement annuities with a significant reinvestment rate-of-return risk);
 - c. where a company has a new or rapidly growing line of business; and
 - d. where options have been granted to policyholders or borrowers and the likelihood of antiselection in the exercise of these options is significant (for example, an annuity contract holder’s option to surrender the annuity for cash at book value).
- 3.2.2 **Cash Flow Testing is Not Always Necessary**—Insurers are subject to different types and degrees of risk. The actuary may decide that the type or degree of risk does not warrant cash flow testing. Following are examples of situations where other types of analyses might be sufficient.
- a. If the risks to be analyzed are products with short-term liabilities (for example, the vast majority of cash flows occurring within a few years)

supported by short-term assets, these risks may be more appropriately analyzed through other means. The risks may involve a small number of large individual claims over a short-term period and may be better addressed using risk theory techniques.

- b. If, in the actuary's judgment, a block of business, taken together with its policy term and the associated investment strategy, is relatively insensitive to influences such as changes in economic conditions or interest-rate scenarios, the actuary may determine that cash flow testing is not necessary to support the opinion, report, or recommendation, and other methods may be sufficient.
- c. If the risk being evaluated is unanticipated sources of significant claims (examples in the past include AIDS and asbestos), these risks may be analyzed with methods other than cash flow testing.

3.2.3 Use of Analyses or Data Predating the Analysis Date—If appropriate, the actuary may use analyses performed prior to the valuation date, an analysis performed at the time of policy issue, modeling based on data taken from a time that predates the analysis date, or other methods.

The actuary should document the reasonableness of such prior period data, studies, analyses, or methods, that key assumptions are still appropriate, and that no material events have occurred prior to the valuation date that would invalidate the analysis on which the actuary's opinion is based.

3.3 Identification of Assets—The actuary should identify which assets are included in the cash flow analysis.

3.3.1 Choice of Asset Subsets to Use—The same assets should not be improperly used to support different blocks of policy cash flows.

3.3.2 Notional Asset Portfolios—If the liability of the insurer is based on the performance of a notional asset portfolio, such as in the case of synthetic guaranteed investment contracts, the actuary should include the notional asset portfolio creating this liability in this analysis.

3.3.3 Other Assets—The actuary should consider whether policy loans, deferred premiums, and other policy-related assets should be included in the cash flow analysis.

3.4 Projection of Asset Cash Flows—In projecting an insurer's asset cash flows for a given scenario, the actuary should consider the assets of the insurer and the insurer's investment strategy.

3.4.1 Asset Characteristics—The characteristics of an asset affect the timing and amounts of its cash flows. The cash flows of some assets are relatively immune to external factors and can be predicted on the basis of asset structure alone (for example, high-quality noncallable bonds). The cash flows of other assets (for example, callable bonds, mortgage-backed securities, common stocks, derivative contracts, or premium receivables) are more sensitive to external events, and their analysis should be based on a combination of their structure and external factors. The actuary should consider the following issues in making cash flow projections:

- a. the sensitivity to economic factors, such as interest rates, equity, or other market returns, and inflation rates on the insurer’s asset cash flows;
- b. any limitations on the ability to use asset cash flows to support policy or other liability cash flows, such as when a block of assets is specifically held in support of a particular block of business by contract or regulation;
- c. the impact on cash flow associated with asset quality as it relates to the risk of a delay in asset cash flows being collected, asset default, or other financial nonperformance;
- d. the associated costs of maintaining the assets or of converting the assets into cash when necessary;
- e. the historical experience of similar assets, to the extent such experience is credible and relevant to the projection of future asset cash flows; and
- f. other known factors that are likely to have a material effect on asset cash flows, particularly those factors that are likely to have an effect on asset risk or investment rate-of-return risk.

3.4.2 Investment Strategy—The actuary should consider the following in performing the cash flow analysis:

- a. the insurer’s strategy regarding the sale of assets prior to maturity;
- b. asset segmentation in support of the insurer’s policy cash flows;
- c. the insurer’s strategy regarding the sale of assets with a declining market value;
- d. the insurer’s strategy for the investment of future positive or negative cash flows;

- e. to the extent the insurer's investment strategy contemplates borrowing to cover negative cash flows, whether the funds borrowed pursuant to the strategy are reasonable in relation to the insurer's existing indebtedness, borrowing capacity, and cost of borrowing funds;
 - f. the insurer's use of derivative contracts, including strategies to mitigate asset, policy, or other liability cash flow risk;
 - g. to the extent the insurer's investment strategy contemplates capital contributions from a parent or other source, whether the capital contributions can be sustained and are appropriate for the type of analysis;
 - h. the costs or gains due to asset, policy, or other liability cash flows denominated in foreign currencies; and
 - i. any other known factors that are likely to have a material effect on investment strategy or the insurer's ability to execute its investment strategy.
- 3.5 **Projection of Policy Cash Flows**—In projecting an insurer's expected policy cash flows, the actuary should consider the policy's cash flow characteristics as well as the insurer's policies concerning the management of its policy cash flows.
- 3.5.1 **Policy Cash Flow Characteristics**—The characteristics of a policy affect the timing and amounts of its cash flows. The actuary should consider the following factors in projecting policy cash flows:
- a. the risk of insolvency or other nonperformance by providers of services, including reinsurers and other counter-parties;
 - b. the associated costs of maintaining, collecting, or paying out the policy cash flows;
 - c. the historical experience of similar policy cash flows, to the extent such experience is credible and relevant to the projection of future cash flows;
 - d. the effect of external factors such as interest rates, equity or other market returns, unemployment rates, and inflation rates on the insurer's policy cash flows;
 - e. the ability of the policyholder or other party to exercise options under the policy that have an effect on policy cash flows (for example, put options

subject to a predefined event occurring, or allowing the transfer of funds between contracts or funding vehicles);

- f. the effect of changes in premium (for example, rate increases) or changes in other policy charges (for example, cost of insurance charges in universal life contracts); and
- g. other known factors that are likely to have a material effect on policy cash flows, including off-balance sheet items.

3.5.2 **Management Policy**—The actuary should consider management policy concerning the settlement or payment of liabilities, and the effect that this management policy may be reasonably expected to have on the projection of policy cash flows. Considerations that might affect the projection include claim settlement and benefit payment practices, expense-control strategies, company philosophy relative to the determination of policyholder dividends, and charges or benefits that vary at the discretion of the company, as well as significant relationships between management policy and the scenarios analyzed.

- 3.6 **Other Liability Cash Flows**—The actuary should consider whether other liability cash flows should be included in the analysis being conducted.
- 3.7 **Materiality**—The actuary may determine that certain asset, policy, or other liability cash flows will not be analyzed if these asset, policy, or other liability cash flows may be reasonably expected not to have a material impact on the overall results. The analysis need not be refined if, in the judgment of the actuary, further refinement would not result in a materially different actuarial opinion, report, or recommendation.
- 3.8 **Reinsurance**—The actuary should consider whether reinsurance receivables will be collectible when due, and any terms, conditions, or other aspects that may be reasonably expected to have a material impact on the cash flow analysis.
- 3.9 **Separate Accounts**—The actuary should consider the effect of separate account asset, policy, or other liability cash flows on the general account. For example, the actuary should consider general account guarantees, recoverability of unamortized expense allowances, and allowable transfers between the separate account and the general account.
- 3.10 **Modeling and Data**—The actuary should select an appropriate model for the analysis being performed. When the asset, policy, or other liability cash flows being analyzed are represented by sample or hypothetical data, the cash flows used for modeling should be representative of the block of asset, policy, or other liability cash flows being analyzed and should be consistent with the intended purpose and use of the analysis.

3.10.1 Scenarios—The scenario is a key element in the analysis of cash flows. Depending on the purpose of the analysis, more than one scenario may be used. Scenarios may be generated by either deterministic or stochastic methods.

- a. Range of Scenarios Consistent with Purpose of Analysis—The scenario(s) to be analyzed may be specified by the client or employer, by applicable law, or by the actuary. The actuary should determine whether the scenarios analyzed reflect a range of conditions consistent with the purpose of the analysis of cash flows. If not, the actuary should disclose any material inconsistency in any actuarial report prepared pursuant to section 4.2, or in any other communication of the actuary's findings.
- b. Number of Scenarios—Consistent with the purpose of the analysis, the actuary should consider a sufficient number of scenarios to reasonably represent the underlying variability of the asset, policy, or other liability cash flows.

3.10.2 Sensitivity Testing—The actuary should consider and appropriately address the sensitivity of the model to the effect of variations in key assumptions. For example, the further into the future that asset and policy cash flows are projected, the more potential there is for variability in the future cash flows. In determining whether sensitivity has been appropriately addressed, the actuary should consider the intended purpose and use of the analysis and whether the results reflect a reasonable range of variation in the key assumptions, consistent with that intended purpose and use.

3.10.3 Internal Consistency—The actuary should determine the following:

- a. whether actuarial assumptions within each of the interest rate and other scenarios being analyzed are consistent where appropriate; and
- b. that the actuarial assumptions, methods, or models used for different segments of business are materially consistent, and that any significant interdependencies are modeled appropriately.

If not, the actuary should disclose any material inconsistency in any actuarial report prepared pursuant to section 4.2 or in any other communication of the actuary's findings.

3.10.4 External Requirements—The actuary should consider how applicable law, and other external requirements relating to such things as financial statements and operating ratios, federal income taxes, insurer capitalization, and distribution of an insurer's earnings to policyholders or shareholders are likely to affect future cash flows or

constrain the range of possible scenarios. These factors should be appropriately reflected in the analysis.

- 3.10.5 Projection Period—The time period over which cash flows are projected should be consistent with the purpose of the analysis. Different blocks of business may require different projection periods. If the objective is to analyze cash flows over the entire life of the block of business, then the actuary should choose a time period over which the underlying asset, policy, or other liability cash flows are material. If the objective is to analyze cash flows over a period shorter than the entire life of the block of business, then the actuary should disclose the existence of possible material cash flows beyond such a time period in analyzing results.
- 3.10.6 Limitations of Models, Assumptions, and Data—Cash flow estimates can vary considerably as a result of the model used, the assumptions selected, and the data. When results are highly volatile, additional analysis may be appropriate.
- 3.11 Negative Interim Earnings—The actuary should consider the impact of any negative interim earnings during the cash flow projection period, if it is appropriate for the purpose of the analysis.

Section 4. Communications and Disclosures

- 4.1 Reliance on Others for Data, Projections, and Supporting Analysis—The actuary may rely on data, projections, and supporting analysis supplied by others. In doing so, the actuary should disclose both the fact and the extent of such reliance. Such disclosure may follow the forms prescribed in the applicable NAIC model laws and regulations. The accuracy and comprehensiveness of data, projections, or supporting analysis supplied by others are the responsibility of those who supply the data, projections, or supporting analysis. When practicable, the actuary should review the data, projections, and supporting analysis for reasonableness and consistency, and disclose such a review. For further guidance, the actuary is directed to ASOP No. 23, *Data Quality*.
- 4.2 Actuarial Report—If appropriate, given the purpose for which the cash flow analysis was performed, the actuary should issue a written actuarial report as a means of documenting the data, assumptions, techniques, and conclusions reached.
- 4.3 Documentation—The degree of documentation of the actuary’s cash flow analysis will vary with the complexity and purpose of the analysis. The documentation should be more complete for more significant assignments such as regulatory cash flow testing than for other assignments such as periodic income projections.

The actuary should document the following, as appropriate, for the cash flow analysis being conducted:

- a. whether any analyses performed prior to the valuation date were used, and, if so, the reasonableness of the prior period data, studies, analyses, or methods;
- b. the purpose of the analysis and the risks analyzed;
- c. the type of analysis performed (i.e., whether cash flow testing or some other method of analysis) for each block of business analyzed;
- d. the results of the analysis;
- e. the actuary's conclusions or recommendations, if any;
- f. any conclusions or recommendations related to sensitivity testing; and
- g. the data, assumptions, and methods used with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the actuary's work. The actuary should consider whether the documentation should contain the following:
 1. the asset characteristics;
 2. any limitations on the ability to use asset cash flows to support policy and other liability cash flows;
 3. the insurer's investment strategy;
 4. how the policy cash flow characteristics are reflected in the analysis, including the insurer's policies concerning the management of its policy cash flows;
 5. any cash flows not attributable to specific asset, policy, or other liability cash flows;
 6. whether any off-balance sheet items were included in the analysis;
 7. relevant cash flows within the scope of the analysis that were specifically excluded from the cash flow analysis due to immateriality;
 8. the characteristics of any reinsurance agreements, and how these were reflected in the analysis;

9. the effect of separate account asset, policy, or other liability cash flows on the general account, such as general account guarantees;
 10. the model used, including the sources of data and key assumptions;
 11. the scenarios used, and the rationale supporting the methodology used to choose and develop the scenarios;
 12. how any external factors were included in the analysis;
 13. the time period over which cash flows are projected;
 14. the existence of negative interim earnings and its effect on the analysis;
 15. whether the actuary relied on asset cash flow projections or other analyses of assets supplied by others, and the extent of such reliance; and
 16. any other data, assumptions, or other methods that are known to materially impact the analysis.
- 4.4 Retention—The actuary, to the extent practicable, should take reasonable steps to ensure that the documentation will be retained for a reasonable period of time (and no less than the length of time necessary to comply with any statutory, regulatory, or other requirements). The actuary need not retain the documentation personally; for example, it may be retained by the actuary’s employer.
- 4.5 Disclosures—The actuary should include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Actuaries have been performing financial projections for many years. Various cash flow elements have often been an integral part of these projections. The large increase in the level and volatility of investment rates of return since the 1970s caused significant swings in asset, policy, or other liability cash flows and present values. The sophistication of insurance products has increased during this time. In addition, fluctuating operating results have led to increased attention to improving the measurement of the financial security of insurers. As a result of these changes, cash flow analysis has become an increasingly important aspect of actuarial work.

Current Practices

Common approaches to cash flow analysis typically follow these steps:

1. identify which asset, policy, or other liability cash flows are to be included in the cash flow analysis;
2. select and validate models for asset, policy, or other liability cash flows;
3. select an appropriate scenario or set of scenarios, either deterministic or stochastic;
4. project the selected asset, policy, or other liability cash flows under each selected scenario; and
5. develop conclusions based on analysis of the cash flow projections.

There are variations on this process. For example, if cash flow analysis is used to analyze the effects of changes in investment strategy, specific assets may not be identified in the initial step of the process. It may be sufficient instead to analyze variations in asset portfolio characteristics such as yield and duration.

Cash flow analysis can be used in a variety of ways, such as analyzing the performance of a particular asset or product under certain specified scenarios or evaluating the solvency of the entire company. A common current use of cash flow analysis is to meet the requirements of the

NAIC's *Actuarial Opinion and Memorandum Regulation (AOMR)*, including any variations to this regulation passed by a state in adopting the model.

Appendix 2

Comments on the Exposure Draft and Task Force Responses

The exposure draft of this revised actuarial standard of practice was issued in September 2000 with a comment deadline of March 31, 2001. (Copies of the exposure draft are available from the ASB office.) Twenty-one comment letters were received. The Cash Flow Testing Task Force of the Life Committee of the ASB carefully considered all comments received. Summarized below are the significant issues and questions contained in the comment letters and the task force's responses.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	A number of commentators asked for clarification whether the analysis can be for part of an insurer's asset, policy, or other liability cash flows. One commentator did not want the standard to allow testing of only assets or liabilities.
Response	The revised ASOP No. 7 allows testing of asset, policy, or other liability cash flows individually or only in part, as appropriate. <u>The task force added wording in section 1.2 to clarify the point.</u>
Comment	A few commentators believed that section 1.2 should specifically mention items that are relevant in today's practice, namely determination of capital adequacy (such as the C-3 RBC tests that were required for some companies for the first time in 2000) and determination of fair value.
Response	The task force agreed that capital adequacy is relevant for today's practice, but believed that fair value is not defined well enough, so the task force added only capital adequacy to the list of items.
Comment	A few commentators asked whether ASOP No. 7 was appropriate for property/casualty insurance and health benefit plans.
Response	The task force notes that a joint property/casualty and life task force originally developed ASOP No. 7, which continues to be appropriate for certain property/casualty work and for health benefit plans.
Comment	One commentator questioned the relevance of ASOP No. 7 for non-U.S. work.
Response	Annotation 3-1 of the Code of Professional Conduct requires the actuary to observe applicable standards of practice promulgated by a recognized actuarial organization for the jurisdiction in which the actuary renders actuarial services. ASOPs promulgated by the Actuarial Standards Board apply to actuarial services rendered in the United States. Actuarial services rendered in a non-U.S. jurisdiction would be subject to actuarial standards of practice promulgated by such jurisdiction's recognized actuarial organization, if any. Therefore, the task force made no change as a result of this comment.
SECTION 2. DEFINITIONS	
Section 2.2, Asset, and 2.11, Liability	
Comment	Many commentators offered suggestions for changing these definitions.
Response	The task force believes the definitions are appropriate. The definitions are consistent with those found in other standards, where practical. The definitions in ASOP No. 7 are for just this standard and are appropriate for this standard.

Section 2.5, Cash Flow Analysis, and 2.6, Cash Flow Testing	
Comment	One commentator did not like the distinctions made between “cash flow analysis” and “cash flow testing.”
Response	The task force believes the definitions are appropriate, since ASOP No. 7 is now designed to make a hierarchy of types of analysis, with “cash flow analysis” being the most general term, and “cash flow testing” being one type of cash flow analysis.
Section 2.12, Notional Asset Portfolio	
Comment	A number of commentators suggested changes to this definition.
Response	The task force revised the definition in response.
Section 2.13, Other Liability Cash Flows	
Comment	One commentator noted that the term “other liability cash flows” was used, but not defined, in the exposure draft of ASOP No. 22. A commentator on ASOP No. 22 thought that the definition should include surplus notes.
Response	The task force agreed and added a definition of “other liability cash flows,” which includes a reference to surplus notes, to both ASOP No. 7 and No. 22.
Section 2.15, Policy Cash Flows (previously section 2.14)	
Comment	One commentator noted that the definition did not treat premium taxes properly, as premium taxes are not paid on behalf of policyholders, but rather are paid as required by law.
Response	The task force agreed with this comment and changed the definition accordingly.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2.1, Reasons for Cash Flow Testing, and 3.2.2, Cash Flow Testing is Not Always Necessary	
Comment	A few commentators questioned the use of the phrases “long duration” and “short-term,” and noted that these can have meaning in a GAAP context.
Response	The task force agreed that the use of those phrases could cause confusion in that regard and changed the wording.
Section 3.2.2, Cash Flow Testing is Not Always Necessary	
Comment	One commentator asked that the phrase “policy term” be included as part of what the actuary should consider as to whether a block is relatively insensitive to changes in economic conditions.
Response	The task force agreed and added words to accomplish this.
Section 3.2.3, Use of Analyses or Data Predating the Analysis Date	
Comment	One commentator believed that the actuary should consider future material events in the analysis.
Response	The task force disagreed, believing such a thing is beyond the scope of cash flow analysis.
Section 3.5.1, Policy Cash Flow Characteristics	
Comment	One commentator asked that the issue of changes in the premium scales be included explicitly.
Response	The task force added section 3.5.1(f), which specifically identifies changes in premiums and other charges as items for the actuary to consider.
Section 3.7, Materiality	
Comment	A few commentators wanted further guidance on materiality. Several asked that materiality be mentioned in specific sections.
Response	The task force believes that more detailed guidance on materiality is beyond the scope of this standard. The task force notes that the guidance in section 3.7 is applicable to the entire standard, so it did not add specific mentions in other sections.

Section 3.8, Reinsurance	
Comment	One commentator asked whether section 3.8 differed from section 3.5.1(a).
Response	Section 3.5.1(a) specifically deals with policy cash flows, while section 3.8 is broader than that. The task force made no changes to either section.
Section 3.9, Separate Accounts	
Comment	A few commentators wanted more detailed guidance on treatment of flows between the general account and the separate account.
Response	The task force believes that the level of guidance in this section is appropriate. However, the task force agreed with a comment that the actuary should consider whether certain cash flows between the general and separate accounts were allowable, and changed the wording accordingly.
Section 3.10.1, Scenarios	
Comment	A number of commentators questioned the use of the word “often” in the sentence, “Often, more than one scenario will be analyzed.”
Response	The task force removed the word “often” and substituted the words “depending on the purpose of the analysis.”
Comment	Regarding 3.10.1(b), Number of Scenarios, one commentator wanted more detailed guidance on the number of scenarios. Another commentator wanted words that put less emphasis on the investment rate of return being the key item of interaction with asset, policy, or other liability cash flows.
Response	The task force believes that the level of guidance on the number of scenarios is appropriate. The task force did change this section to put less emphasis, when choosing the number of scenarios, on whether asset, policy, or other liability cash flows vary with investment rates of return.
Section 3.10.2, Sensitivity Testing	
Comment	A few commentators noted the issue of cash flows being more uncertain the further into the future a projection is done.
Response	The task force agreed and added words to section 3.10.2, noting more potential for variability the further into the future the cash flows are projected.
Section 3.11, Negative Interim Earnings	
Comment	One commentator mentioned that negative interim earnings were an accounting issue and that, therefore, this section should be eliminated.
Response	The task force disagreed. This section emphasizes the point that, if appropriate for the purposes of the analysis (for example, an asset adequacy test), the actuary should consider whether negative earnings in some years (the typical concern being the early projection years) affect whether future positive earnings in other (typically, later projection) years can be realized; i.e., the block tested may require the infusion of additional funds before the positive earnings years start. The task force agreed that in some types of analyses (for example, pricing and analyzing a new block of business where the company has significant surplus) the consideration of negative earnings may not be appropriate.

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Reliance on Others for Data, Projections, and Supporting Analysis	
Comment	One commentator noted that wherever the term “data” was mentioned in terms of an actuary reviewing and using the work of others, it was more appropriate to use the more comprehensive terminology “data, projections, or supporting analysis.”
Response	The task force agreed and made the recommended change.
Section 4.3, Documentation	
Comment	Some commentators believed that section 4.3 should be more general and not contain a list of items needing documenting, while others liked the guidance a list gave.
Response	The task force agreed to keep the list, but shortened the descriptions of some of the items.
Comment	A few commentators noted that the amount of disclosure should vary based on the complexity of the project.
Response	The task force agreed and added wording to note this.
Comment	One commentator noted that a disclosure item should be added for analyses performed prior to the valuation date.
Response	The task force agreed and added what is now section 4.3(g).
Comment	One commentator noted that section 4.3(g)(15) (previously section 4.3(u)) on documentation of negative interim earnings should be modified to note that this should be done only if appropriate for the analysis.
Response	The task force believes this issue is covered by other wording in section 4.3, which notes that documentation should be appropriate for the analysis being done.
Section 4.4, Retention	
Comment	One commentator noted that there should be a section on document retention.
Response	The task force agreed and added a new section 4.4, Retention.

Appendix 3

Comments on the Revised Standard as Adopted in September 2001 and ASB Responses

As appendix 2 indicates, the exposure draft of this revised actuarial standard of practice was issued in September 2000 with a comment deadline of March 31, 2001. The Cash Flow Testing Task Force of the Life Operating Committee of the ASB, after carefully considering all comments received, presented a proposed final revised standard to the ASB for adoption. At its September 2001 meeting, the ASB adopted the revised standard (with minor edits) with an effective date of April 15, 2002.

In March of 2002, representatives of the Casualty Practice Council of the American Academy of Actuaries identified concerns regarding the application of the revised standard to property and casualty practice. Specifically, they expressed concern that the scope of the revised standard went beyond generally accepted actuarial practice in the property and casualty area and, arguably, called for casualty actuaries to consider cash flow testing in settings where they typically would not do so and where, in their view, cash flow testing would not be needed.

In light of these concerns, the Casualty Practice Council formally requested that the ASB defer the effective date of the revised standard to July 15, 2002, in order to provide the Council with an opportunity to present its concerns and offer one or more suggested remedies. The ASB carefully considered the Casualty Practice Council's request and agreed to defer the effective date of the revised standard to July 15, 2002.

Representatives of the Casualty Practice Council attended the ASB's June 2002 meeting and presented the Council's concerns. The chairperson of the Life Operating Committee of the ASB was also present. After considerable discussion and consideration, the ASB agreed that it would be appropriate to do the following:

1. amend the scope of the revised standard to conform more closely to current, generally accepted practice among property and casualty actuaries;
2. proceed with such amended scope without re-exposure to the membership since the scope and content of the revised standard (as adopted at the September 2001 meeting) with respect to life and health practice remained unaltered; and
3. inform the membership and all interested parties of these developments and the effective date of July 15, 2002.

The Casualty Practice Council representatives also opined that section 3.2, Determining the Level of Analysis of Cash Flows, in requiring the actuary to consider "all material risks and

options embedded in the asset, policy or other liability cash flows,” was unclear as to what is or is not “material.” The ASB agreed a clarification was appropriate for all practice areas, and modified the section to require the actuary to consider only those risks and options that the actuary believes to be material.



**Actuarial Standard
of Practice
No. 8**

**Regulatory Filings for Health Benefits, Accident and Health Insurance,
and Entities Providing Health Benefits**

Revised Edition

**Developed by the
Task Force on Regulatory Filings of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2014**

Doc. No. 176

T A B L E O F C O N T E N T S

Transmittal Memorandum

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ASOP No. 8—March 2014

March 2014

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 8

This document is a final version of a revision of ASOP No. 8, now titled *Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits*.

Background

The new federal Affordable Care Act (ACA), current publicity concerning health insurance premium rate increases, and state activity in the rate increase review sponsored by federal grants have resulted in very high visibility on this actuarial activity. Due to the significant number of changes in the rate filing and rate review process due to the ACA, the American Academy of Actuaries' Health Practice Council requested that the ASB revise ASOP No. 8, *Regulatory Filings for Health Plan Entities*. The ASB reviewed the request and agreed that the current ASOP No. 8 should be expanded to provide additional guidance. The ASB authorized a task force of the Health Committee to draft a revised version of this standard. To gather input on the direction of the scope, a discussion draft was released in January 2013 before an exposure draft of the revision was issued in June 2013.

This revision to ASOP No. 8 provides guidance to actuaries who prepare or review regulatory filings under state and federal requirements for filing health insurance premium rate increases. It also provides further guidance to actuaries reviewing regulatory filings. Furthermore, ASOP No. 8 was revised to add guidance on the preparation and review of health insurance rate filings for medical lines of business that are required by state or federal regulations.

Many health regulatory filings under ACA will become due summer 2014. Although the effective date for this standard is September 1, 2014, as noted in ASOP No. 1, *Introductory Actuarial Standard of Practice*, section 3.1.7, this standard is now a part of the actuarial literature and may provide useful information to actuaries preparing filings prior to its effective date.

Exposure Draft

The exposure draft of this revised ASOP was issued in June 2013 with a comment deadline of October 15, 2013. The task force carefully considered the six comment letters received and made changes to the language in several sections in response. For a summary of the substantive issues

ASOP No. 8—March 2014

contained in the exposure draft comment letters and the task force's responses, please see appendix 2.

The most significant change from the exposure draft was the deletion of section 3.8, Recognition of Plan Provisions, as it was duplicative of other guidance in the ASOP. Additional changes were made to clarify language throughout the ASOP. The ASB voted in March 2014 to adopt this standard.

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 8

**REGULATORY FILINGS FOR HEALTH PLAN BENEFITS, ACCIDENT AND
HEALTH INSURANCE, AND ENTITIES PROVIDING HEALTH BENEFITS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to preparing or reviewing required regulatory filings related to rates or **financial projections** for health plan benefits, health insurance, and entities providing health benefits.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services with respect to preparing or reviewing **health filings**, as defined in section 2.5, required by and made to state insurance departments, state health departments, the federal government (including those required by the Affordable Care Act), and other regulatory bodies. This includes reviewing actuaries when called upon to testify or review filings on behalf of consumers. Where specified, the guidance in this standard applies only to **filing actuaries**. Where not specified, the guidance applies to both **filing actuaries** and **reviewing actuaries**, as defined in section 2.

Health filings require projection of future contingent events and can be categorized into two broad categories: rate or benefit filings and **financial projection** filings. Some of these filings are made on behalf of health plan entities, such as filings made in conjunction with applications for licensure. Other filings are required for **health benefit plans** provided by health plan entities, such as filings for approval of rates. Such filings may be required for new and existing health plan entities, for new health benefit plans, and for revisions to existing **health benefit plans**.

The filings covered by this standard do not include filings to certify compliance with rating methods and other actuarial practices applicable to carriers for small employer **health benefit plans** (see ASOP No. 26, *Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans*); statements of actuarial opinion relating to statutory financial statements of health plan entities (see ASOP No. 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life and Health Insurers*, and ASOP No. 28, *Compliance with Statutory Statement of Actuarial Opinion Requirements for Hospital, Medical, and Dental Service or Indemnity Corporations, and for Health Maintenance Organizations*); **financial projections** subject to ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*; filings related to benefits provided by casualty insurance policies; and

filings that are solely experience reports and do not require projection of future contingent events.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial work product covered by this standard’s scope issued on or after September 1, 2014.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Discount Rate**—The rate used to discount projected cash flow to determine their present value.
- 2.2 **Filing Actuary**—An actuary who prepares, supervises the preparation of, or peer reviews a **health filing** on behalf of a **health plan entity**. This includes actuaries employed by the **health plan entity** and consulting actuaries. This does not include a “**reviewing actuary**,” as defined in section 2.9.
- 2.3 **Financial Projection**—A projection of covered lives, premiums, claims, expenses, capital and surplus, or other financial quantities that may be required by applicable law.
- 2.4 **Health Benefit Plan**—A contract or other financial arrangement providing hospital, medical, prescription drug, dental, vision, disability income, accidental death and dismemberment, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, service benefit, or other basis, irrespective of the type of **health plan entity** that provides the benefits.
- 2.5 **Health Filing**—A required regulatory filing for health benefits, accident and health insurance, and entities providing health benefits, which requires projection of future contingent events, for rates or benefits, or **financial projections**.

Rate or benefit filings include, but are not limited to, the following:

- a. filings of manual rates, rating factors, or underwriting manuals;

- b. filings of rating methodology, such as experience rating formulas and factors;
- c. statements of actuarial soundness or rate adequacy, as may be defined by the regulatory body, for future rating periods;
- d. certification of benefit values, such as actuarial value or actuarial equivalence, for example, as required by the Affordable Care Act; and
- e. other filings of a similar nature as may be required by a regulatory body.

Financial projection filings include, but are not limited to, any filings in which the **financial projections** are a stand-alone requirement, such as those for licensure requirements, or are a requirement of a broader filing, such as a rate filing or projections of future capital and surplus or other **regulatory benchmark** requirements.

- 2.6 **Health Plan Entity**—An insurance company, health maintenance organization, hospital or medical service organization, self-insured **health benefit plan** sponsor, governmental **health benefit plan** sponsor, or any other **health benefit plan** sponsor from which **health filings** are required.
- 2.7 **Rate of Investment Return**—Investment income earned on funds held over time, expressed as a percentage of those funds.
- 2.8 **Regulatory Benchmark**—A measurement that may be used by the regulatory authority in evaluating a **health filing**. Possible benchmarks may include loss ratios, capital ratios, or actuarial values.
- 2.9 **Reviewing Actuary**—An actuary who is responsible for reviewing a **health filing** on behalf of a government agency or consumers. This includes actuaries employed by the government agency and consulting actuaries engaged to review a **health filing** on behalf of the government agency or consumers.
- 2.10 **Time Value of Money**—The principle that an amount of money available at an earlier point in time has different usefulness and value than the same amount of money has at a later point in time.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—Many jurisdictions require **health filings** that demonstrate compliance with applicable law, which may vary considerably as to the requirements and procedures for these filings. In many cases, such law may be silent as to the assumptions and methodology to be used, thus giving the actuary discretion to exercise professional judgment in preparing and reviewing the filings.

- 3.2 **Purpose of Filing**—When preparing a filing, the **filing actuary** should include in the filing a statement of its purpose, identifying the applicable law with which it is intended to comply. For example, the **filing actuary** might state, “The purposes of this rate filing are to document the rates and to demonstrate that the anticipated loss ratio of this product with those rates meets the minimum requirements of Section XX of the statutes of [name of state]. This filing may not be appropriate for other purposes.”
- 3.3 **Applicable Law**—When an actuary prepares or reviews a regulatory filing, the actuary should have knowledge and understanding of applicable law. If the actuary believes applicable law is silent or ambiguous on a relevant issue, the actuary should consider obtaining guidance from an appropriate expert. In this situation, the actuary should describe how the relevant issue was addressed when preparing or reviewing the filing.
- 3.4 **Assumptions**—The actuary should determine which assumptions are necessary for the filing and select appropriate assumptions. Assumptions the actuary should consider selecting include, but are not limited to, the following:
- 3.4.1 **Premium Levels and Future Rate Changes**—The actuary should consider current premium levels and expectations for future rate changes.
- 3.4.2 **Projections of Covered Lives**—The actuary should consider the impact of future changes in the underlying covered population on the projected claims. These changes may include, but are not limited to, changes in demographics, risk profile, or family composition.
- 3.4.3 **Levels and Trends in Morbidity, Mortality, and Lapsation**—The actuary should consider current levels of and historic trends in morbidity, mortality, and lapsation rates.
- 3.4.4 **Non-Benefit Expenses, Including but Not Limited to Administrative Expenses, Commissions, Broker Fees, and Taxes**—The actuary should use appropriate methods and assumptions for calculating the non-benefit expenses component of premium rates. Possible methods include, but are not limited to, the use of a target loss ratio or the estimation of expenses appropriately attributed to the health benefit on a percentage of premium or fixed-dollar basis. When estimating the latter amounts, the actuary should consider the **health plan entity**’s own experience, reasonably anticipated internal or external future events, inflation, and business plans. The actuary may also consider relevant external studies. The actuary should consider the reasonableness of the non-benefit expense component of premium rates relative to projected expenses.
- 3.4.5 **Investment Earnings and the Time Value of Money**—The actuary should consider whether to reflect investment earnings and the **time value of money** in the calculations used in the filings. When applicable, the actuary should select assumptions for the **rate of investment return** and the **discount rate** that are

individually reasonable, mutually consistent, and reflective of the terms of the contract.

- 3.4.6 **Health Cost Trends**—The actuary should consider historical experience trends when estimating future trends. Projected trends may be based on insured or population data. When medical expense trends are projected, the actuary should consider detail by service category (for example, inpatient, outpatient, professional, and drug) or service setting (for example, nursing home, home care, or assisted living facility), separated by cost and utilization, if relevant, reasonably available, and credible.

The actuary should consider changes in benefit provisions and provider contracting when projecting future trends from historical trends, as the change in unit costs and utilization may differ from prior periods. The actuary should be aware that historical trends may not be the best predictor of future trends.

The actuary should consider whether an adjustment for leveraging is needed for products with fixed-dollar, member-cost sharing elements such as co-pays, deductibles, and out-of-pocket limits.

In analyzing trend, the actuary should make a reasonable effort to remove and separately analyze other factors that affect cost. Examples include, but are not limited to, demographic changes, plan mix changes, durational effects, and underwriting.

- 3.4.7 **Expected Financial Results, such as Profit Margin/Surplus Contribution, Loss Ratio, or Surplus Level**—The actuary should consider the appropriate methods and assumptions for calculating the profit margin/surplus contribution. Possible methods include, but are not limited to, the use of a target loss ratio or a target return on capital.

The actuary should consider the reasonableness of the profit margin/surplus contribution in relation to the degree of risk accepted by the plan sponsor.

- 3.4.8 **Expected Impact of Known Contractual Arrangements with Health Care Providers and Administrators**—A **health plan entity** may have many health care provider contracts with a wide variety of payment structures such as fee-for-service and capitation. When estimating the impact of health care provider contracts on future periods, the actuary should consider the appropriate level of detail needed to produce reasonable results.

- 3.4.9 **Expected Impact of Reinsurance and Other Financial Arrangements**—The actuary should consider how risk sharing, risk adjustment, reinsurance payments and other financial arrangements are reflected in the base period data, and how these amounts should be estimated and reflected in the projected premium rates, including their impact on financial results.

- 3.4.10 **Provisions for Adverse Deviation**—The actuary should consider whether the aggregate provisions for adverse deviation are sufficient to cover anticipated costs under moderately adverse experience.
- 3.5 **Rating Calculations**—The actuary should review and understand the formulas used to calculate premium rates and determine that, based on the available data and relevant assumptions, they are appropriate for the purpose of setting premium rates.
- 3.6 **Use of Business Plans to Project Future Results**—The **filing actuary** should request and, if available, review relevant business plans for the **health plan entity** or **health benefit plan** that is the subject of the filing. The **filing actuary** should consider the information therein along with any other information relevant to the business plan in setting the assumptions and methodologies used in the filing. The **filing actuary** is not required to use assumptions identical to those in the business plan in developing the rate filing.
- 3.7 **Use of Past Experience to Project Future Results**—The actuary should determine whether past claims experience can be used to project future results. The actuary should also determine the extent to which past experience trends are relevant to assumed future trends. The actuary should refer to ASOP No. 23, *Data Quality*, for guidance on data selection.

In making these determinations, the actuary should consider the applicability and credibility of the data. These considerations may differ for the total claims in a period, the claims for a particular service category, and the experience trends. To the extent that the **filing actuary** concludes that the experience data is not applicable or credible for a particular use, the **filing actuary** should identify additional sources that are appropriate (see ASOP No. 25, *Credibility Procedures*).

When using past experience to project future results, the actuary should make adjustments to reflect any known or expected changes that, in the actuary's professional judgment, are likely to have a material effect on expected future results. These may include, but are not limited to, changes in the following:

- a. selection of risks;
- b. demographic and risk characteristics of the insured population;
- c. policy provisions, including but not limited to benefits, limits, and cost sharing;
- d. business operations, including how health coverages are marketed, distributed, underwritten, and managed, and changes in the product portfolio;
- e. provider contracts;
- f. premium rates, claim payments, expenses, and taxes;

- g. seasonality in incurred claims;
- h. trends in mortality, morbidity, and lapse;
- i. catastrophic claim variability;
- j. administrative procedures, including claim payment practices;
- k. federal or state regulations (for example, risk adjustment, reinsurance, risk corridors, underwriting requirements, and benefit mandates);
- l. medical practice (for example, changes in medical technology and provider organization);
- m. cost containment procedures or quality improvement initiatives; and
- n. economic conditions.

The actuary should make adjustments to past experience, as appropriate, in a way that reasonably matches claim experience to exposure. For example, the actuary should not use ratios of paid claims to collected premiums to project future incurred loss ratios except with appropriate adjustments.

The **filing actuary** should update prior earned premium and incurred claim estimates to reflect premium and claim development experience to date when, in the actuary's professional judgment, the difference is material.

- 3.8 **Rating Factors**—For medical expense coverages, the actuary should be familiar with the rating factors used for the plans and the structure of those factors. The actuary should be familiar with the regulatory requirements for rating factors and structures.

Rating factors for medical expense coverages should be based on actuarially derived variations to the extent permitted by applicable law. In this regard, the actuary should refer to ASOP No. 12, *Risk Classification*, for guidance.

- 3.9 **New Plans or Benefits**—The actuary should consider available data relevant to new plans or benefits. In the absence of sufficient data, the actuary should use data from similar benefits or plans of coverage that are reasonably consistent with the new plans or benefits.

- 3.10 **Projection of Future Capital and Surplus**—As part of a **health filing**, the **filing actuary** may be called upon to project future capital and surplus for the entire **health plan entity** or a portion of it, such as a business unit. In doing so, the **filing actuary** should base the projection on reasonable assumptions that take into account any internal or external

future actions known to the **filing actuary** that, in the **filing actuary**'s professional judgment, are likely to have a material effect on capital or surplus.

- 3.11 **Regulatory Benchmark**—The actuary may be called upon to project results in relation to a **regulatory benchmark** for the entire **health plan entity** or a portion of it, such as a line of business. The actuary should base the projection on appropriate available information about the relevant book of business.

Regulatory benchmarks might include, but are not limited to, the following:

- 3.11.1 **Rate Adequacy**—Rates may be considered adequate if they provide for payment of claims, administrative expenses, taxes, and regulatory fees and have reasonable contingency or profit margins.
- 3.11.2 **Rates Not Excessive**—Rates may be considered excessive if they exceed the rate needed to provide for payment of claims, administrative expenses, taxes, regulatory fees, and reasonable contingency and profit margins.
- 3.11.3 **Rates Not Unfairly Discriminatory**—Rates may be considered unfairly discriminatory if the rates result in premium differences among insureds within similar risk categories that: (1) are not permissible under applicable law; or (2) in the absence of an applicable law, do not reasonably correspond to differences in expected costs.
- 3.11.4 **Projected Loss Ratio**—A projected loss ratio may be considered unreasonable if it does not meet or exceed a threshold under applicable law.

- 3.12 **Reasonableness of Assumptions**—The actuary should review the assumptions employed in the filing for reasonableness. The assumptions should be reasonable in the aggregate and for each assumption individually. The support for reasonableness should be determined based on the actuary's professional judgment, using relevant information available to the actuary. This information may include, but is not limited to, business plans; past experience of the **health plan entity** or the health benefit coverage; and any relevant industry, government, or academic studies that are generally known and reasonably available to the actuary. The actuary should make a reasonable effort to become familiar with such studies.

The **filing actuary** may rely upon others to provide assumptions for developing the regulatory filing. However, the **filing actuary** should review the assumptions for reasonableness. The **filing actuary** should use any such assumption only if the actuary believes it is reasonable, unless it is prescribed by applicable law. The **filing actuary** should disclose any such reliance in accordance with ASOP No. 41, *Actuarial Communications*.

- 3.13 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data*

Quality, for guidance. The **filing actuary** should disclose any such reliance in accordance with ASOP No. 41.

- 3.14 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.1.

Section 4. Communications and Disclosures

- 4.1 **Communications and Disclosures**—When issuing actuarial communications relating to **health filings** for health plan entities, the actuary should refer to ASOP Nos. 23 and 41. A **health filing** will usually require the completion of an actuarial report, as defined by ASOP No. 41. In addition, such actuarial communications should disclose the following:
- a. the sources of information;
 - b. any material information supplied by others and the extent of the actuary's reliance on such information;
 - c. any unresolved concerns the actuary may have about the information that could have a material effect on the actuarial work product;
 - d. any material changes to rating methodology, plan provisions, sources or quality of experience data, or assumptions since a substantially similar previous filing, if any. This includes, but is not limited to, changes in covered services, cost sharing, rating factors, and non-benefit expenses;
 - e. limitations on the use of the actuarial work product;
 - f. the reasons that the **filing actuary** departed from the guidance set forth in this standard in order to comply with applicable law, or for any other reason the actuary deemed appropriate;
 - g. the definition of “actuarially sound,” if that term is used to describe a process or result;
 - h. the actuary’s understanding of pertinent sections of applicable law that are silent or ambiguous, as required by section 3.3;
 - i. any adjustments to past experience used to project future results, as discussed in section 3.7;

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- j. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- k. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- l. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

Many jurisdictions require the filing of actuarial memoranda or similar documents in connection with health plan entities or health insurance policy filings. An actuary may be involved in the preparation or review of these filings. The applicable laws differ as to their content, scope, and requirements. Many laws are silent as to procedures and assumptions to be employed, thus giving the actuary significant discretion to exercise professional judgment in these areas.

The recently enacted Affordable Care Act (ACA) added additional filing requirements for medical expense policies for the individual and small group markets. Beginning in 2011, rate filings for the individual and small group market must comply with new federal and state requirements resulting from the passage of the Affordable Care Act (ACA).

Current Practices

Current practices for some forms of health insurance, such as disability income and long term care are well established. However, the passage of the ACA changed the landscape for medical expense coverages.

A practice note related to ACA filings, *Actuarial Practices Relating to Preparing, Reviewing, and Commenting on Rate Filings Prepared in Accordance with the Affordable Care Act* (October 2012) (http://www.actuary.org/files/RRPN_100512_final.pdf) was published in October 2012 by the American Academy of Actuaries. A supplement to this practice note (http://www.actuary.org/files/RRPN_042613_updated_exposure_draft_final.pdf) was published as an exposure draft in April 2013. These documents provide information to actuaries providing rate filings subject to the Affordable Care Act. These documents provide information on current practice to actuaries preparing, reviewing, or commenting on rate filings in accordance with Section 2794 of the Public Health Service Act, as amended by the Affordable Care Act for the 2014 filings prepared in 2013. The addendum to the practice note addresses a revised Department of Health and Human Services (HHS) form filing called the uniform rate review template (URRT) and actuarial memorandum instructions. The originally published practice note discussed the preliminary justification form, which was replaced by the URRT and actuarial memorandum instructions by HHS.

HHS and the states will revise regulations and interpretations periodically. HHS has provided instructions for the preparation of actuarial memoranda and certifications as well as for the completion of the various required formats for submission of rate filings. These instructions should be reviewed and are located on the System for Electronic Rate and Form Filing (SERFF)

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website of the National Association of Insurance Commissioners at the following link:
http://www.serff.com/documents/plan_management_data_templates_help_partIII_actuarial_me_mo.pdf.

Other useful information can be found on the Centers for Medicare & Medicaid Services (CMS) website at the following link: <http://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/index.html>.

Presentations and other training material presented by CMS may also be found on the CMS website at the following link: <http://www.cms.gov/CCIIO/Resources/Training-Resources/index.html>.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of ASOP No. 8, *Regulatory Filings for Health Benefits, Health Insurance, and Entities Providing Health Benefits*, now titled *Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits* was issued in June 2013 with a comment deadline of October 15, 2013. Six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force on Regulatory Filings and the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the task force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the task force, Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator was concerned that the proposed revised title for the ASOP may not clearly indicate that this ASOP is intended to apply to a broader definition of health benefits (for example, long-term care or disability insurance), and suggested revising the title to include reference to “accident” or “disability”—for example, <i>Regulatory Filings for Health Benefits, Accident and Health Insurance, and Entities Providing Health Benefits</i> .
Response	The reviewers agree and made the change.
Comment	<p>One commentator noted that all references to “reviewing actuaries” are intended to reflect the perspective of the regulatory reviewing actuary only and not the peer-reviewing actuary. In order to clarify that different standards apply to regulatory actuaries as opposed to filing/peer reviewing actuaries, the commentator suggested the following changes to paragraphs 2 and 3 on page v:</p> <ul style="list-style-type: none">• Revisions to ASOP No. 8 will give guidance to actuaries that must prepare or peer review rate filings under more rigorous state and federal requirements for filing health insurance premium rate increases. It also provides further guidance to actuaries reviewing regulatory filings either as peer reviewers or as regulatory actuaries.• ASOP No. 8 was revised to add guidance on the preparation and review of health insurance rate filings for medical lines of business that are required by state or federal regulations. The standard will apply to actuaries preparing or peer reviewing the rate filing, peer reviewing the rate filing, and to actuaries reviewing the rate filing on behalf of state and federal regulators. <p>In addition, the commentator noted that item 6 on page vi should reference section 3.12 rather than section 3.2.10.</p>
Response	The reviewers removed the distinction of peer reviewers or regulatory actuaries in the first paragraph but retained the distinction of three roles in the second paragraph. The definition of “filing actuary” in

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	section 2.2 of this final ASOP includes reference to peer review activity. In addition, the reviewers made sure the reference is correct.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	Several commentators noted that in section 1.2 the reference to health filings being defined in section 2.4 instead of 2.5 is incorrect.
Response	The reviewers agree and made sure the reference is correct.
Comment	One commentator suggested that in section 1.2, Scope, the ASB consider including within the scope of this ASOP actuaries who may be called upon to testify and/or review filings on behalf of consumers.
Response	The reviewers agree and added language to include those actuaries.
Comment	One commentator suggested that, in order to draw attention to the primacy of statute/regulation over standards of practice, the last paragraph of this section be revised to state: “This Standard applies to the extent it is not inconsistent with the regulatory requirements with which the filing is to comply. If the actuary departs from the guidance set forth in this standard in order to comply with applicable laws (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. It is noted that the final decision as to the approval or disapproval of a filing may not rest ultimately in the hands of the reviewing actuary.”
Response	The reviewers note that the ASOP already contemplates the primacy of applicable law and, therefore, made no change.
Comment	One commentator suggested that the scope of the guidance in ASOP No. 8 should include filings made within the scope of ASOP No. 26, <i>Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans</i> .
Response	The reviewers believe that the purpose of filings made within the scope of ASOP No. 26 is different than that of filings made within the scope of ASOP No. 8 and, therefore, retained the exclusion for filings subject to ASOP No. 26.
Comment	One commentator noted that, despite the last sentence in section 1.2, explicit disclosure of such a departure is not included in section 4 and, therefore, recommended adding the following to section 4.1: “k. in all instances where, and the reasons that, the filing actuary departed from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations and other legally binding authority), or for any other reason the actuary deemed appropriate.”
Response	The reviewers agree and made the change to section 4.1(f) of this final ASOP. The reviewers also refer the commentator to ASOP No. 41.
Comment	One commentator suggested that the sentence in section 1.1 that refers to “performing professional services with respect to preparing or reviewing required regulatory filings related to rates or financial projections” and the sentence in section 1.2 that states, “This standard is not meant to provide a complete set of recommended practices for the determination of health rates, financial projection entries, or other numerical information required to be included in health filings” are inconsistent.
Response	The reviewers agree and removed the language from section 1.2.
SECTION 2. DEFINITIONS	
Comment	One commentator stated it was not clear what would constitute a “peer review,” and that adding a definition would be helpful.
Response	The reviewers believed that the term peer review is commonly used and made no change.

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Comment	One commentator noted the difference between “rate of investment return” and “discount rate” is not clear and suggested that definitions be provided for both of these items.
Response	The reviewers agree and added definitions.

Section 2.1, Filing Actuary

Comment	Several commentators noted that the reference to section 2.9 should be section 2.7.
Response	The reviewers checked the reference in the final version, and it is now correctly referred to as section 2.9.
Comment	One commentator noted that this section refers to work “on behalf of a health plan issuer” but that there is no definition of “health plan issuer.” The commentator suggested this section refer to “health plan entity” to be consistent with the definition in section 2.5.
Response	The reviewers agree and made the change.
Comment	One commentator noted that it could be interpreted that this definition only applies to the actuary(ies) who are ultimately responsible for the filing and believed that it should apply to any actuary who worked in any way on the filing.
Response	The reviewers note that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , section 4.3 requires each individual actuary to be responsible for determining which ASOPs apply to the actuary’s work. When the actuary is only responsible for part of the rate filing development or review, the actuary should follow the appropriate ASOPs that are applicable to the task at hand. Therefore, no change was made.

Section 2.2, Financial Projection

Comment	One commentator noted an inconsistency in that sometimes instead of “applicable law” reference is made only to “law” (as is in section 3.9) and suggested “or regulation” be removed and a definition be added to explain “law.”
Response	The reviewers agree and modified the language to remove “or regulation” as the scope has a parenthetical making it clear that the definition extends beyond “law.”

Section 2.3, Health Benefit Plan

Comment	One commentator noted that this section defines a health benefit plan to include a broad range of coverages, including vision, disability income, long-term care, etc., but most of the examples in the remaining sections seem to deal primarily with medical insurance. Therefore, the commentator felt that more non-medical examples should be included.
Response	The reviewers note that changes in the prior ASOP No. 8, which covered all lines of business, were reviewed and believe the revised ASOP No. 8 is still appropriate for the lines of business outlined in the scope, and made no change.
Comment	One commentator noted that the reference to “whether on a reimbursement, indemnity, or service benefit basis” should be expanded to “whether on a reimbursement, indemnity, service benefit or other basis” to reflect possibly that other mechanisms may be used, such as capitation or bundled payment systems.
Response	The reviewers agree and made the change.

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Section 2.4, Health Filing	
Comment	One commentator felt that since some companies present substandard rating factors only in their underwriting manuals without referring to them elsewhere, that this section should be revised to read “a. filing of manual rates, rating factors, and underwriting manuals.”
Response	The reviewers agree and made the change.
Comment	One commentator felt that an item should be added to the list of rate or benefit filings such as “determinations of the actuarial value or actuarial equivalence.”
Response	The reviewers agree and made the change.
Section 2.5, Health Plan Entity	
Comment	One commentator questioned what is the definition of a “health benefit plan sponsor”?
Response	The reviewers note that this is a commonly used term that refers to the entity responsible for the health benefit plan and made no change.
Section 2.6, Regulatory Benchmark	
Comment	One commentator suggested it could be made clearer that the specific quantities referenced (loss ratio or capital ratio) are illustrative examples only and suggested the following rephrasing: “Regulatory Benchmark – A measurement which may be used by the regulatory authority in evaluating a health filing. Possible benchmarks include, but are not limited to, the loss ratio, a capital ratio, or actuarial value.”
Response	The reviewers agree and modified the language.
Section 2.7, Reviewing Actuary	
Comment	Two commentators suggested changing the term “reviewing actuary” to “regulatory actuary” so that it is clear that the reviewing actuary is always the regulatory actuary.
Response	The reviewers believe that “regulatory actuary” is a subset of “reviewing actuary” and made no change.
Comment	One commentator felt that “reviewing actuary” should be defined as an actuary who is responsible for reviewing a health filing on behalf of the health plan issuer. The commentator said; “This would include actuaries employed by the health plan issuer and consulting actuaries, as there seems to be a trend of health plan issuers obtaining independent review of health filings by an actuary either employed by the health plan issuer or by a consulting actuary.” The commentator believes this to be a different role than a peer review.
Response	The reviewers believe that the definitions of “filing actuary” and “reviewing actuary” are clear as written, and made no change.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Introduction	
Comment	One commentator noted that the phrase “thus giving the actuary significant discretion to exercise professional judgment” appears to make a distinction between “discretion” and “significant discretion.” What is the reason for including the word “significant” as a modifier to “discretion”? The commentator felt that the use of the modifier would appear to give the actuary a greater degree of latitude than simply indicating that the actuary has discretion. For clarity, the commentator recommend adding: “This Section 3 and the following Section 4 provide guidelines for filing actuaries where the law may be silent as well as in other situations where actuaries have discretion to exercise professional judgment in preparing and reviewing filings.”
Response	The reviewers removed the term “significant” but believe the recommended additional language was not necessary.
Section 3.3, Legal and Regulatory Requirements	
Comment	One commentator noted that, in the current ASOP No. 8, the predecessor of the new section 3.3 is a second paragraph of 3.2.1, which deals with the statement of the purpose of the filing. The new 3.3 is more general. The commentator suggests that the greater generality requires some changes in wording.
Response	The reviewers agree and changed section 3.3 and added an item (h) under section 4.
Comment	One commentator recommended editing the second sentence to state “If the actuary believes applicable law is silent or ambiguous on a relevant issue, the actuary should disclose this and should consider obtaining guidance from an appropriate expert.” The commentator also recommended that after this sentence, the following sentence should be inserted: “The name, credentials and qualifications, and guidance received from such an expert should be disclosed.”
Response	The reviewers made revisions based on the first suggestion. With respect to the second, the reviewers do not believe it is necessary to disclose the name, credentials, and qualifications of anyone who was consulted, and made no change.
Comment	One commentator noted that this section indicates that “the actuary should have the necessary knowledge and understanding of applicable law.” The commentator noted that laws and regulations governing health filings are very extensive. The commentator believed that either this standard or a practice note should indicate that it is extremely difficult for an actuary to know the nuances of every law or regulation in every state.
Response	The reviewers believe the actuary has always been required to understand the applicable laws where the filing is being made, and made no change.
Section 3.4, Assumptions	
Comment	Two commentators noted that the introductory paragraph contains inconsistencies and also appears to be very prescriptive. One commentator suggested adding clarification that the assumptions listed be reviewed by the actuary for “necessity and relevancy” to the rate filing.
Response	The reviewers agree and made clarifying changes to this section.
Section 3.4.4, Non-Benefit Expenses	
Comment	One commentator indicated that in the sentence “When estimating the latter amounts, the actuary should consider the health plan entity’s own experience when appropriate, reasonably anticipated internal or external future events, inflation, and business plans” it is unclear why the phrase “when appropriate” modifies only “the health plan entity’s own experience” as opposed to any of the other items.
Response	The reviewers agree with the commentator’s suggestion and removed the phrase “when appropriate.”

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Comment	One commentator noted that the last sentence states “The actuary should consider the adequacy of the non-benefit expense component of premium rates relative to projected costs.” The commentator went on to say that the same section, however, notes that an acceptable method for reflecting non-benefit costs is the “use of a target loss ratio.”
Response	The reviewers agree and changed “adequacy” to “reasonableness” in sections 3.4.4 and 3.4.7.
Comment	One commentator stated that it is unclear why reference is made only to “relevant industry and government studies.” The commentator believed that other entities such as academic institutions and public interest groups could also have published relevant studies.
Response	The reviewers agree and modified the language to include relevant external studies.
Section 3.4.5, Investment Earnings and the Time Value of Money	
Comment	One commentator noted that in the sentence, “The actuary should consider whether to reflect investment earnings and the time value of money in the calculations used in the filings,” the words “whether to reflect” should be removed and that the actuary should be required to consider these factors.
Response	The reviewers believe that there are situations where these considerations are immaterial and made no change.
Section 3.4.6, Health Cost Trends	
Comment	One commentator noted that trends are addressed solely in terms of medical insurance. The commentator indicated that there probably should be some mention of LTC or DI. For long-term care the commentator recommended the following: “When long-term care trends are projected, the actuary should consider the frequency, utilization, and duration of future claims by care setting (for example, nursing home, home care, or assisted living facility).”
Response	The reviewers agree and revised the section to be more general, as well as included examples from other lines of business, to address the commentator’s concerns.
Comment	One commentator suggested that a statement indicating that trends may be based on insured or population data should be included.
Response	The reviewers agree and included a sentence in section 3.4.6.
Comment	One commentator noted that the last paragraph states that, “the actuary should select an estimate of the trend based on the actuary’s professional judgment. For example, historical trends may or may not be the best predictor of future trends.” The commentator felt that the paragraph is probably not necessary since the process of selecting assumptions is almost always based on professional judgment.
Response	The reviewers agree and modified the language.
Comment	One commentator noted that this section includes a number of items that should be considered when determining trend. The commentator recommended also including items that should not be considered, essentially identifying factors that are outside of trend. The commentator suggested adding language such as, “In analyzing trend, the actuary should make an effort to remove and separately analyze other factors that affect cost.”
Response	The reviewers agree and revised the language accordingly.
Comment	One commentator suggested adding “provider contracting” to the following: “The actuary should consider changes in benefit provisions and provider contracting when projecting future trends from historical trends, as the change in unit costs and utilization may differ from prior periods.”
Response	The reviewers agree and made the change.

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Comment	One commentator stated that the sentence, “When medical expense trends are projected, the actuary should consider detail by service category (for example, inpatient, outpatient, professional, and drug), separated by cost and utilization, if available, credible, and determined by the actuary to improve the accuracy of the calculation used in the filing” is problematic. The qualifier “if available” can be interpreted in different ways.
Response	The reviewers made changes to clarify the guidance.
Comment	One commentator asked if the qualifier “credible” means that the data needs to be 100% credible, or that less than fully credible data could be used to the extent of its credibility.
Response	As discussed in ASOP No. 25, <i>Credibility Procedures</i> , the reviewers believe that the determination of “credible” is up to the actuary’s professional judgment and, therefore, made no change.
Comment	One commentator stated that, with regard to the phrase “determined by the actuary to improve the accuracy of the calculation used in the filing,” it is unclear how the actuary could make that determination until after the detailed trend data have been reviewed and analyzed.
Response	The reviewers agree and removed the language.
Section 3.4.7, Expected Financial Results, such as Profit Margin/Surplus Contribution, Loss Ratio, or Surplus Level	
Comment	One commentator stated that the last sentence that states “The actuary should consider the adequacy of the profit margin/surplus in relation to current surplus levels” is not universally consistent with current practices nor should it be. The commentator believes that this section should be much less prescriptive than “should consider” with respect to any particular rate filing. Another commentator stated that part of that consideration of profit margin should be consistency between the target return on capital and the investment return on assets.
Response	The reviewers agree with both comments and made appropriate changes to the section.
Comment	One commentator stated it may not be clear to all actuaries what the significance of Profit Margin/Surplus Contribution is. The commentator noted that the last paragraph reads “The actuary should consider whether the provisions for adverse deviation are appropriate to provide a margin for variability and uncertainty in projected health costs. The actuary should consider the cumulative effect of any such provisions built into other assumptions.” The commentator recommended the following language: “The actuary should consider whether the aggregate provisions for adverse deviation are sufficient to cover anticipated costs under moderately adverse experience.”
Response	The reviewers agree and added this language as a new section 3.4.10.
Comment	One commentator stated that the sentence, “When a target return on capital is used, the actuary should consider the relationship between risk and return” could imply that when a procedure other than a target return on capital is used (for example, loss ratio target), the actuary need not consider the relationship between risk and return. The commentator felt that this is incorrect and that the actuary should always consider the relationship between risk and return when determining an appropriate “Profit Margin/Surplus Contribution.”
Response	The reviewers agree and modified the language.

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Comment	One commentator stated that the sentences, “The actuary should consider whether provisions for adverse deviation are appropriate to provide a margin for variability and uncertainty in projected health costs. The commentator stated that “The actuary should consider the cumulative effect of any such provisions built into other assumptions” appears to imply that the actuary can include hidden additional profit margins in various places in the filing by using values for various parameters/assumptions that are higher than the expected value. Such a procedure is not appropriate. The commentator felt that; “All the projections in the filing for various costs such as benefits and expenses should be based upon the expected future reasonable values. If the actuary believes that various margins for variability and uncertainty need to be included in the rate, those provisions should be explicitly included as part of the underwriting profit provision instead of being hidden and dispersed in various other components of the rate calculation.”
Response	The reviewers believe that it is up to the actuary to determine the appropriate accounting and actuarial practice for the placement of margins for adverse experience. The reviewers removed the language in section 3.4.7 and added 3.4.10 regarding adverse deviation.

Section 3.4.9, Expected Impact of Reinsurance and Other Financial Arrangements

Comment	One commentator stated that the sentence “The actuary should consider how risk sharing, risk adjustment, or reinsurance payments should be reflected ...” should be made more expansive. The commentator suggested possible wording: “The actuary should consider how risk sharing, risk adjustment, reinsurance payments, risk corridors and other financial arrangements should be reflected”
Response	The reviewers agree and added the phrase “and other financial arrangements.”

Section 3.6, Use of Business Plan

Comment	Two commentators noted that business plans are not generally reviewed for every rate filing. One commentator suggested that “should consider” be replaced with “may consider” while the other commentator suggested adding “If appropriate,...”
Response	The reviewers note “should consider” implies only that the actuary consider if business plans are relevant to the rates being filed, and made no change.
Comment	One commentator suggested that if the actuary considered business plans in preparing the filing, it should be explicitly stated in the filing, along with whether the filing actuary used the assumptions contained in the business plan. The commentator felt that; “When the actuary uses the assumptions from the business plan, there should be an explanation of why that was appropriate. Also, when the actuary does not use the assumptions in the business plan, there should be an explanation of why the actuary believed those assumptions were not appropriate for the filing.”
Response	The reviewers note that a business plan is only one potential data point in preparing assumptions for a rate filing and, therefore, made no change.
Comment	One commentator suggested that this section would benefit from language that helps distinguish how business plans should be used to develop rates versus disclosed in filings. The commentator further suggested the addition of the following sentence, “The regulatory actuary should consider requesting this information when it is important to the consideration of rate adequacy for solvency.”
Response	The reviewers believe that the guidance provided by this standard is adequate for appropriate practice, and made no change.

ASOP No. 8—March 2014

Section 3.7, Use of Past Experience to Project Future Results	
Comment	One commentator noted that in this section there is a statement that refers to “claims of a particular service category” but that it may not be clear what the term “service category” refers to.
Response	The reviewers note that in section 3.4.6, the parenthetical identifies “service categories” and made no change.
Comment	One commentator noted that this section indicates that “The filing actuary should update prior earned premium and incurred claim estimates to reflect premium and claim development experience...” but feel that that it should state: “ <i>When appropriate</i> , the filing actuary...”
Response	The reviewers note that in the phrase “in the actuary’s professional judgment” implies “when appropriate” and made no change.
Comment	One commentator recommended adding two more items to the list of items to which any changes may have a material effect on expected future results. Specifically the commentator suggested: One new item (k) would be “changes to federal or state regulations (e.g., risk adjustment, reinsurance, risk corridors, underwriting requirements, and benefit mandates).” The second new item (l) would be “underlying change in medical practice (e.g., changes in medical technology and provider organization).” While this could be included in item (f), listing it separately may help actuaries think about changes to these areas specifically.
Response	The reviewers agree and made the change.
Comment	One commentator suggested the following language be inserted between the second and the third paragraphs of section 3.7: “The actuary should consider the most recent data available for the plan, giving appropriate consideration to the degree of maturity likely to be present in the claim and claim liability reserves. The actuary should consider the principles of ASOP No. 23, <i>Data Quality</i> , in the use and application of the data.”
Response	The reviewers agree and added a sentence to indicate that data should be selected in accordance with ASOP No. 23, <i>Data Quality</i> .
Comment	One commentator suggested adding “The filing actuary should provide adequate documentation for such adjustments” to the paragraph.
Response	The reviewers agree and added section 4.1(i).
Comment	One commentator noted that in the sentence “To the extent that the actuary concludes that the experience data is not applicable or credible for a particular use, the actuary should identify additional sources that are appropriate (see ASOP No. 25, <i>Credibility Procedures</i>)”, both instances of “actuary” be changed to “filing actuary,” feeling the reviewing actuary should not be required to identify additional experience sources for use in the filing.
Response	The reviewers agree and made the change.

ASOP No. 8—March 2014

Comment	One commentator noted that the sentence “The actuary should determine whether past claims experience can be used to project future results. The actuary should also determine the extent to which past experience trends are relevant to assumed future trends” implies that the actuary could choose not to use actual historical claims experience and trends for the filing. The commentator felt that if the actuary makes that determination, there should be an explanation of why such data were not used, since typical actuarial analyses are based on the premise that the historical information forms an appropriate starting basis for making future projections.
Response	The reviewers disagree and made no change.
Comment	One commentator questioned when would “selection of risks” be an appropriate consideration for an actuary updating past experience, unless the actuary was considering selection of risks in the past that is no longer legal?
Response	The reviewers note that selection of risks is still practiced for some of the products covered by this ASOP, such as disability income, long-term care, and grandfathered plans and excepted products under ACA. The reviewers made no change.
Comment	One commentator stated that the sentence, “The filing actuary should update prior earned premium and incurred claim estimates to reflect premium and claim development experience to date when, in the actuary’s professional judgment, the difference is material” is unclear. The commentator went on to say; “Is that referring to a situation where the original data were in error and a correction has been made? Is it referring to a situation where more recent data are available than was originally used in preparing the filing? In any case, how can the actuary know whether “the difference is material” unless the actuary actually uses the new data and compares the results to that obtained from using the prior data? In any circumstance, the reason for a revision of interpretation of the data should be fully documented.”
Response	The reviewers believe the guidance is clear and appropriate, and made no change.
Comment	One commentator suggested that other considerations in selecting trends can include: <ul style="list-style-type: none">• Impact of higher cost sharing on decreasing utilization• Impact of the out-of-pocket expenses• Impact of narrower networks on decreasing utilization• Impact of cost containment or quality improvement initiatives, and• Impact of economic conditions on utilization and unit costs.
Response	The reviewers determined that cost sharing and out-of-pocket costs are covered in section 3.7(c). The reviewers determined that considerations for narrower networks are covered in 3.7(e). The reviewers added language in section 3.7(m) to address cost containment and quality improvement initiatives, and in section 3.7(n) to address the impact of economic conditions.
Section 3.8, Recognition of Plan Provisions	
Comment	One commentator expressed concern that the expectations of section 3.8 were overly broad and did not represent typical practices of actuaries.
Response	The reviewers disagree with the assertion that actuaries do not typically consider these items. However, the reviewers deleted the section as it duplicated guidance provided in other sections.
Section 3.9, Rating Factors	
Comment	One commentator noted the word “variation” in the first sentence of the second paragraph should be “variations.”
Response	The reviewers agree and made the change.

ASOP No. 8—March 2014

Section 3.10, New Plans or Benefits	
Comment	One commentator suggested changing both instances of “actuary” to “filing actuary,” as the reviewing actuary will not generally have access to the same data resources as the filing actuary.
Response	The reviewers note both the “filing actuary” and the “reviewing actuary” have a role to consider the available data relevant to new plans or benefits, and made no change.
Section 3.12, Regulatory Benchmarks	
Comment	One commentator noted that the use of the word “may” is weak and could imply that the rate may not be considered adequate under those circumstances. The commentator went on to say; “In addition, the wording implies that the rates are adequate to pay for the actual costs, when the proper actuarial criterion is that the rates should provide the payment of expected costs. Furthermore, only reasonable costs should be considered in making this determination. Excessive costs due to items such as inflated expenses and inefficient claim practices should be excluded.” Another commentator noted that rates must be considered unfairly discriminatory if they are based on differences that cannot be considered under applicable law or regulation. A third commentator expressed concerns with the phrase “reasonable contingency and profit margins,” and suggested using the term “not unreasonable” instead of “reasonable.”
Response	The reviewers note that this section of the standard relates to regulatory benchmarks set by the regulatory process, and made no change.
Section 3.13, Reasonableness of Assumptions	
Comment	Two commentators expressed concerns that the list of study sources was too narrow.
Response	The reviewers agree and broadened the language.
Comment	One commentator suggested the last sentence of the first paragraph be revised to read, “The reviewing actuary should make a reasonable effort to become familiar with such studies provided by the filing actuary.”
Response	The reviewers believe that both the filing and reviewing actuary should become familiar with such studies, and made no change.
Comment	One commentator noted that section 3.13 allows for the actuary to use his or her professional judgment to determine reasonableness of assumptions, stating that for any given assumption, it may be reasonable to vary the level of review of that assumption based on the materiality of the issue. To address this issue, the commentator suggests adding the following language: “The support for reasonableness should be determined based on the actuary’s professional judgment, using relevant information available to the actuary, <i>and taking into account all aspects of the filing.</i> ”
Response	The reviewers note that ASOP No. 1 includes guidance on the term “reasonable” and determined that the requirement that the actuary’s professional judgment be applied is appropriate. As a result, the reviewers believe that the additional language is not needed, and made no change.
Comment	One commentator noted it may be worth commenting in this section on assumptions that are regulated, as this is covered in section 4.1, but also could be added here in the second paragraph as follows “The filing actuary should use any such assumption only if the actuary believes it is reasonable, <i>unless it is prescribed by applicable law.</i> ”
Response	The reviewers agree and added the phrase to section 3.12 of this final ASOP.

ASOP No. 8—March 2014

Comment	One commentator noted that the sentences, “The filing actuary may rely upon others to provide assumptions for developing the regulatory filing. However, the filing actuary should review the assumptions for reasonableness. The filing actuary should use any such assumption only if the actuary believes it is reasonable” appears to be in conflict with section 4.1(i) which discusses “the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary.” The commentator stated that the former appears to indicate that the actuary is responsible for the assumption even if someone else provided it, whereas the later states the actuary can disclaim responsibility for an assumption provided by another party.
Response	The reviewers note that actuaries are always responsible for determining if the assumptions that they relied on are reasonable, unless prescribed by law. ASOP No. 41 requires that if actuaries disclaim responsibility for material assumptions, that disclaimer, and the reasons, must be disclosed. Therefore, no change was made.

Section 3.14, Reliance on Data or Other Information Supplied by Others

Comment	One commentator suggested deleting “filing” from the first sentence, feeling this section should apply to both filing and reviewing actuaries.
Response	The reviewers agree and made the change.

SECTION 4. COMMUNICATIONS AND DISCLOSURES

Section 4.1, Communications and Disclosures

Comment	One commentator suggested the following be added: <ul style="list-style-type: none">• k. all instances where, and the reasons that, the filing actuary departed from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations and other legally binding authority), or for any other reason the actuary deemed appropriate.
Response	The reviewers agree and made the change.
Comment	One commentator suggested adding that filings should be complete with respect to data templates and other documentation required by the applicable regulatory authority, and submitted in the form and manner defined by that regulatory authority. The commentator felt that the ASOP should specify that this requirement only applies to templates typically completed by the filing actuary or actuary’s staff as, typically, these are the templates based upon financial projections and/or premium rates.
Response	The reviewers note that the scope of this ASOP is limited to the actuarial components of a regulatory filing. The actuary should always follow applicable law, and section 4.1 provides guidance for disclosure in the event that the law requires deviation from the guidance in the ASOP. Therefore, no change was made.

APPENDIX 1

Comment	One commentator noted that the last sentence in the opening paragraph says “Beginning in 2013....” Since HHS promulgated its “10% threshold for unreasonable rate increases” in 2011, should “2013” be “2011” (or perhaps even 2010 with the passage of the ACA).
Response	The reviewers agree and made the change.

ASOP No. 8—March 2014

Comment	One commentator noted that clarification related to the discussion of the rate review practice note and addendum is needed and suggested the following language: “The addendum to the practice note addresses a revised HHS form filing called the uniform rate review template (URRT) and actuarial memorandum instructions. The commentator went on to say that the originally published practice note provided guidance on the preliminary justification form, which was replaced by the URRT and actuarial memorandum instructions by HHS.”
Response	The reviewers agree and modified the language.



**Repeal of
Actuarial Standard
of Practice
No. 9**

**Documentation and Disclosure
in Property and Casualty Insurance
Ratemaking, Loss Reserving,
and Valuations**

**Developed by the
Casualty Committee of the
Actuarial Standards Board**

**Repealed by the
Actuarial Standards Board
March 2011**

(Doc. No. 105)

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March 2011

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations

FROM: Actuarial Standards Board (ASB)

SUBJ: Repeal of Actuarial Standard of Practice (ASOP) No. 9

ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, has been repealed by the ASB.

Background

ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, was adopted in 1991 and relied heavily on Interpretative Opinion No.3 of the *Guides and Interpretative Opinions as to Professional Conduct* of the American Academy of Actuaries. The following Casualty Actuarial Society documents were attached to ASOP No. 9 as separate appendices:

- *Statement of Principles Regarding Property and Casualty Ratemaking;*
- *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves; and*
- *Statement of Principles Regarding Property and Casualty Valuations.*

In 2002, the ASB repealed Interpretative Opinion 3: Professional Communications of Actuaries when the Board adopted ASOP No. 41, *Actuarial Communications*, which superseded the guidance of Interpretative Opinion No. 3. ASOP No. 41 is applicable to all areas of actuarial practice and provides guidance with respect to written, electronic, or oral communications.

The Casualty Committee of the ASB has reviewed ASOP No. 9 and compared the various sections to ASOP No. 41 as well as the *Code of Professional Conduct*. The Committee believes that the topics in ASOP No. 9 are adequately covered in ASOP No. 41, other ASOPs, and the *Code of Professional Conduct*, and concluded that ASOP No. 9 should be repealed.

Exposure Draft

The exposure draft of this repeal document was issued in June 2007 with a comment deadline of August 15, 2007. Seven comment letters were received and were considered in finalizing this repeal document. For a summary of the substantive issues and the reviewers' responses, please see appendix 2.

The ASB reviewed the comment letters in March 2008 and decided to defer repeal of ASOP No. 9 in order to coordinate with the adoption of the ASOP No. 41 revision. The ASB adopted a revised version of ASOP No. 41 in December 2010, effective May 1, 2011.

The ASB thanks all who commented on the repeal.

Action

The ASB voted in March 2011 to repeal ASOP No. 9 effective for actuarial communications issued on or after May 1, 2011.

Casualty Committee of the ASB

Beth Fitzgerald, Chairperson

Shawna S. Ackerman

David J. Otto

Raji Bhagavatula

Marc B. Pearl

Kenneth R. Kasner

Jonathan White

Dale F. Ogden

Actuarial Standards Board

Albert J. Beer, Chairperson

Alan D. Ford

Patricia E. Matson

Patrick J. Grannan

Robert G. Meilander

Stephen G. Kellison

James J. Murphy

Thomas D. Levy

James F. Verlautz

Appendix 1

Note: This appendix is prepared for informational purposes only.

The Casualty Committee prepared the following grid highlighting sections of ASOP No. 9 as a cross reference against ASOP No. 41, *Actuarial Communications* (effective May 1, 2011), other ASOPs and the *Code of Professional Conduct* to reflect where appropriate actuarial guidance already exists for the related item or where the item would have been considered educational material and, therefore, not included in any proposed revision other than possibly an appendix.

Sections of ASOP No. 9		Reference to ASOP No. 41, other ASOPs or the <i>Code of Professional Conduct</i>
Section 2	Definitions	
2.1	Actuarial Report	ASOP No. 41 (2.4)
2.2	Actuarial Work Product	ASOP No. 41 (2.1, 2.3, 2.4)
2.3	Required Actuarial Documentation	ASOP No. 41 (2.1)
2.4	Statement of Actuarial Opinion	ASOP No. 41 (2.1)
2.5	Statement of Actuarial Review	ASOP No. 41 (2.1)
Section 3	Background and Historical Issues	Educational – not needed in standard
Section 4	Current Practices and Alternatives	Educational – not needed in standard
Section 5	Analysis of Issues and Recommended Practices	
5.1	Introduction	ASOP No. 41 (3.1, 3.1.1-3.1.2)
5.2	Extent of Documentation	ASOP No. 41 (3.2, 3.8); ASOP No. 43 (4.2(b)); ASOP No. 36 (4.2(a)); ASOP No. 13 (4.2(b))
5.3	Prevention of Misuse	ASOP No. 41 (3.7); <i>Code of Professional Conduct</i> (Precept 8 and Annotation 8.1)
5.4	Disclosure of Conflict with Professional Judgment, and Advocacy	ASOP No. 41 (3.4.2, 4.3)
5.5	Availability of Documentation	ASOP No. 41 (3.2, 3.7); <i>Code of Professional Conduct</i> (Annotation 10-5)
5.6	Conflicting Interests	ASOP No. 41 (3.4.2, 3.7); <i>Code of Professional Conduct</i> (Precept 7)
5.7	Signature on Work Product	ASOP No. 41 (3.1.4)
5.8	Reliance on Another	ASOP No. 41 (3.4.3, 3.4.4)
5.9	Waiver of Fee	<i>Code of Professional Conduct</i> (Precept 3)
6.1	Deviation from Standard	ASOP No. 41 (4)

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the repeal of ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, was issued to the membership in June 2007 with a comment deadline of August 15, 2007. Seven comment letters were received. The Casualty Committee and the ASB carefully considered all comments received. Summarized below are the significant issues and questions contained in the comments and responses to each. The term “reviewers” in appendix 2 refers to the Casualty Committee and the ASB.

GENERAL COMMENTS	
Comment	One commentator said that the inclusion of the Statement of Principles (Principles) in the appendix of the ASOP gave higher visibility to the Principles. The commentator suggested that the Academy and the ASB find a way to retain access and visibility of the Principles.
Response	The reviewers note that the Principles are not issued or maintained by the ASB. The Principles are readily available on the Casualty Actuarial Society (CAS) website.
Comment	It was noted by a commentator that it was not clear whether the Principles were being retained or repealed.
Response	The action of the ASB to repeal ASOP No. 9 will have no direct impact on the retention or repeal of the Principles since they are issued by the CAS.
Comment	One commentator stated that the overlap between ASOP No. 9 and ASOP No. 41, <i>Actuarial Communications</i> , was not complete. The repeal of ASOP No. 9 would omit several key items. The commentator suggested that the ASB should revise ASOP No. 41 so that appropriate items from ASOP No. 9 are included.
Response	It is the reviewers' belief that key items within ASOP No. 9 are adequately covered in other ASOPs and the <i>Code of Professional Conduct</i> .
Comment	One commentator noted that the Annual Statement Instructions for the Statutory Statement of Actuarial Opinion for loss reserves provide references to various ASOPs, specifically including ASOP No. 9. The Casualty Actuarial Task Force (CATF) of the National Association of Insurance Commissioners (NAIC) in its Annual Guidance publications references and quotes directly from definition 2.1 of ASOP No. 9. In addition, in its comments on ASOP No. 43, <i>Property/Casualty Unpaid Claim Estimates</i> , the CATF stressed the importance of ASOP No. 9 to regulators and ASOP No. 9's relevance to ASOP No. 43.
Response	The reviewers note that references to ASOP No. 9 can be replaced by references to ASOP No. 41, other ASOPs, and the <i>Code of Professional Conduct</i> . Until these references are changed, appendix 1 of the repeal document for ASOP No. 9 provides the appropriate cross references.

Comment	Several commentators stated ASOP No. 41 sets a lower standard of practice than ASOP No. 9. They commented that ASOP No. 9 is not redundant with ASOP No. 41 and, in fact, ASOP No. 41 has weaker language in several instances.
Response	The reviewers compared ASOP No. 9 to the relevant sections of other ASOPs as well as the <i>Code of Professional Conduct</i> . The reviewers concluded that the guidance in ASOP No. 9 is adequately covered in ASOP No. 41, other ASOPs, and the <i>Code of Professional Conduct</i> .

SECTION 2. DEFINITIONS

Section 2.1, Actuarial Report

Comment	Several commentators noted that ASOP No. 9 in this section sets a higher standard than ASOP No. 41 since ASOP No. 9 includes additional language stating that the actuary was “ensuring that the parties addressed are aware of the significance of the actuary’s opinion or finding.” Failure to include this language weakens the resulting standard and opens the door to placing the burden of determining the significance on the addressees (often regulators).
Response	The reviewers believe this issue is adequately addressed by ASOP No. 41, sections 3.1 and 3.2.

SECTION 5. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 5.2, Extent of Documentation

Comment	Several commentators noted that, particularly with regard to reserves, the elimination of language requiring the actuary to document any material changes in sources of data, assumptions, or methods from the last analysis, and to explain the reason and describe the impact of these changes, is a relaxation of the standard. Most of these commentators believe that ASOP No. 9 requires quantification of the impact of these changes. It was further suggested that no similar language is found in other ASOPs or the <i>Code of Professional Conduct</i> .
Response	The reviewers note that similar language exists within other ASOPs, including those applying to reserves. For example, the reviewers refer the readers to ASOP No. 43, section 4.2(b); ASOP No. 36, section 4.2(a); and ASOP No. 13, section 4.2(b). The reviewers also believe that the requirement to “describe the impact of these changes” in ASOP No. 9 does not require a quantification of the impact.
Comment	One commentator noted that ASOP No. 9 requires documentation to be sufficient for another actuary practicing in the same field “to evaluate the work,” whereas ASOP No. 41 requires documentation to be sufficient for another actuary practicing in the same field “to evaluate the reasonableness of the actuary’s work.”
Response	The reviewers do not believe this difference is material.

Section 5.4, Disclosure of Conflict with Professional Judgment, and of Advocacy

Comment	One commentator noted that ASOP No. 41 omits the requirement that the actuary should advise the principal of a conflict of professional judgment and include qualifications in the actuarial communication.
Response	It is the reviewers’ belief that this topic is adequately addressed in ASOP No. 41, sections 3.4.4 and 4.3.

Section 5.5, Availability of Documentation

Comment	One commentator noted that the correspondence between this section and ASOP No. 41 was not at all clear. While some intent of section 5.5 may overlap with sections of ASOP No. 41 and Precept 10 of the <i>Code of Professional Conduct</i> , section 5.5 is broader.
Response	<p>Section 5.5 of ASOP No. 9 makes three basic statements: (1) Documentation should be available to the actuary's client or employer; (2) Documentation should be available to others when the client or employer requests if adequate compensation is made, and it is not improper; and (3) Ownership of documentation is established in accordance with law.</p> <p>Sections 2.4 and 3.2 of ASOP No. 41 provide guidance on documentation to be made available to intended users. The second statement is addressed in Precept 10 of the <i>Code of Professional Conduct</i>, which requires the actuary to cooperate in furnishing relevant information, subject to receiving reasonable compensation, when a principal has given consent. The third statement does not establish a requirement but rather notes that ownership is determined by laws outside control of the ASB. The reviewers believe removing this statement should not impact the application of law.</p>
Section 5.6, Conflicting Interests	
Comment	One commentator noted that it was not clear that the indirect user would be covered under the term "prospective principal" as used in the <i>Code of Professional Conduct</i> .
Response	The reviewers believe that the language found in Precept 8 of the <i>Code of Professional Conduct</i> provides sufficient guidance regarding indirect users.
Section 5.9, Waiver of Fee	
Comment	One commentator noted that in Precept 3 of the <i>Code of Professional Conduct</i> the issue of waived fees is not addressed.
Response	The reviewers note that Precept 3 requires the actuary to satisfy professional standards regardless of whether there is any compensation.
SECTION 6. COMMUNICATIONS AND DISCLOSURES	
Section 6.1, Deviation from Standard	
Comment	One commentator noted that while ASOP No. 41 has a similarly titled section, Deviation from Standard, ASOP No. 9 contains additional language requiring an appropriate and explicit statement with respect to the nature, rationale, and effect of such deviation. ASOP No. 41 merely requires that the actuary justify deviation from the standard.
Response	The reviewers believe that section 4 of ASOP No. 41 adequately addresses this issue.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 10**

**U.S. GAAP for Long-Duration Life,
Annuity, and Health Products**

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 10 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2022**

Doc. No. 207

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December 2022

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in U.S. GAAP for Long-Duration Life, Annuity, and Health Products

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 10

This document contains the revision of ASOP No. 10, now titled *U.S. GAAP for Long-Duration Life, Annuity, and Health Products*.

History of the Standard

ASOP No. 10 was originally adopted by the ASB in 1989. The 1989 standard was developed by the American Academy of Actuaries (Academy) Committee on Life Insurance Financial Reporting for the Life Committee of the ASB. In 1992, ASOP No. 10 was expanded to incorporate certain Financial Reporting Recommendations. In 2000, it was revised to reflect developments in generally accepted accounting principles (GAAP) since 1992.

Since 2000, several American Institute of Certified Public Accountants' Statements of Position pertinent to insurance contract accounting have been issued. In addition, certain features of insurance contracts are now considered under GAAP to be embedded derivatives. These features are accounted for at fair value, which has been more specifically defined. As a result of these developments, the ASB authorized an update to ASOP No. 10.

The 2011 revision removed interpretations of GAAP literature and focused the standard on those activities for which actuaries are most directly responsible. This resulted in the deletion of the “Special Situations” and “Lock-In/Adjustment” sections in the previous version of ASOP No. 10. The ASB believes these sections included interpretations of authoritative GAAP guidance, which is beyond the scope of the actuary’s role. Actuaries can refer to other relevant literature for further information on topics that were deleted.

In 2018, the Financial Accounting Standards Board (FASB) issued amended guidance in Accounting Standards Update (ASU) 2018–12, *Targeted Improvements to the Accounting for Long-Duration Contracts*. ASU 2018–12 makes significant changes to how insurers account for and make financial disclosures relating to long-duration contracts. These accounting changes include periodic review and potential updates to assumptions and discount rates used to calculate liabilities for future policyholder benefits, a new classification called market risk benefits, a simplification of the deferred acquisition cost amortization methodology, and a significant expansion of required disclosures. ASU 2018–12 amended guidance on premium deficiency testing and provisions for risk of adverse deviation for certain long-duration contracts. The mandatory implementation date was subsequently delayed and also allowed for a later implementation date for certain smaller companies and non-SEC filers as defined by

FASB. This will give rise to multiple accounting standards being applicable at the same time. Because of these changes, the ASB authorized another update to ASOP No. 10.

This revision adds guidance reflecting ASU 2018–12 while retaining relevant existing guidance for GAAP because the ASB recognizes that individual company adoption dates of ASU 2018–12 will vary.

Exposure Draft

The exposure draft was approved in April 2022 with a comment deadline of June 30, 2022. Three comment letters were received and considered in making changes that were reflected in the final ASOP.

Notable Changes from the Exposure Draft

Notable changes made in this final ASOP are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Several definitions were revised.
2. Sections 3.1 and 3.2 were revised to require that the actuary be familiar with relevant company accounting policies, rather than operating policies.
3. Section 3.2 was revised to provide guidance when the actuary is contributing to the classification of contracts, features, and benefits.
4. Section 3.9 was revised to cover a range of circumstances.
5. Section 3.12 was modified to better align with the actuary’s responsibilities with respect to revenue recognition.

Notable Changes from the Existing ASOP

A cumulative summary of notable changes from the existing standard are summarized below. Notable changes do not include changes made to improve readability, clarity, or consistency.

1. The title, purpose, and scope of the ASOP now encompass long-duration life, annuity, and health products. The scope was also clarified to include the review of GAAP financial statements.
2. Definitions of “cohort,” “liability for future policy benefits,” and “market risk benefit” were added to section 2, and several definitions were revised.
3. Section 3.1 was revised to encompass the review of methods and assumptions and to clarify the role of the actuary in developing qualitative and quantitative disclosures related to financial statements.

4. Section 3.2 was revised to provide guidance when the actuary is contributing to the classification of contracts, features, and benefits.
5. Sections 3.1 and 3.2 were also revised to require that the actuary be familiar with relevant company accounting policies
6. The statement regarding periodically reviewed and updated assumptions versus locked-in assumptions was added to section 3.3.1 (Best-Estimate Assumptions) for clarity.
7. In section 3.3.2, market risk benefits were added to the examples of items that are measured at fair value.
8. Section 3.4 was added to address discount rate assumptions.
9. Section 3.6 was added to provide guidance on the risk adjustment.
10. Section 3.7 was updated to address internal consistency by cohort and to extend the concept of consistency to risk adjustment.
11. Section 3.8 was added to provide guidance when assumptions are selected by another party.
12. Updated examples of classifications were added to section 3.9(b).
13. Section 3.10 was added to address financial statement disclosures.
14. Section 3.12 was modified to better align with the actuary's responsibilities with respect to revenue recognition.
15. New guidance was added on reliance on others for data, projections, models, and supporting analysis; reliance on another actuary; and reliance on expertise of others in sections 3.14, 3.15, and 3.16.
16. Guidance on documentation was expanded in section 3.17.
17. Disclosure requirements in section 4 were restructured and expanded.

The ASB voted in December 2022 to adopt this standard.

Task Force to Revise ASOP No. 10

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

STANDARD OF PRACTICE

ACTUARIAL STANDARD OF PRACTICE NO. 10

U.S. GAAP FOR LONG-DURATION LIFE, ANNUITY, AND HEALTH PRODUCTS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 Purpose—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services related to the preparation or review of insurance company financial statements in accordance with U.S. generally accepted accounting principles (GAAP) for long-duration life, annuity, or health products.
- 1.2 Scope—This standard applies to actuaries when performing actuarial services related to the preparation or review of insurance company financial statements in accordance with GAAP for long-duration life, annuity, or health products.

The actuary should comply with this standard except to the extent it may conflict with applicable law (statutes, regulations, and other legally binding authority) or authoritative GAAP guidance (such as Accounting Standards Codification [ASC], Staff Accounting Bulletins issued by the U.S. Securities and Exchange Commission, and other guidance issued by authoritative bodies).

If the actuary is performing actuarial services that involve the review of insurance company financial statements in accordance with GAAP for long-duration life, annuity, or health products, the actuary should use the guidance in section 3 to the extent practicable.

If a conflict exists between this standard and applicable law, the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law, authoritative GAAP guidance, or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should follow the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard is effective for actuarial services related to the preparation or review of insurance company GAAP financial statements applicable to fiscal periods ending on or after May 1, 2023.

Section 2. Definitions

The terms below are defined for use in this standard and appear in bold throughout the ASOP. They are intended to conform with authoritative GAAP guidance, where applicable.

- 2.1 **Best-Estimate Assumption**—An assumption that reflects anticipated experience with no provision for **risk of adverse deviation**.
- 2.2 **Cohort**—A grouping of insurance contracts or policies for the purpose of measuring the **liability for future policy benefits, DPAC**, and any other related balances.
- 2.3 **Costs**—All benefit payments and expenses associated with issuing, maintaining (to the extent allowable by authoritative GAAP guidance), and settling a company’s insurance policies and contracts, with no provision for profit.
- 2.4 **Deferred Policy Acquisition Cost (DPAC)**—An asset representing the unamortized portion of capitalized policy acquisition expenses.
- 2.5 **Deferred Sales Inducements (DSI)**—An asset representing the unamortized portion of capitalized sales inducements to policyholders.
- 2.6 **GAAP Net Premiums**—The portion of **gross premiums** that provides for certain **costs**, as defined by authoritative GAAP guidance.
- 2.7 **Gross Premiums**—Amounts contractually required to be paid or anticipated to be contributed by the policyholder.
- 2.8 **Liability for Future Policy Benefits**—An accrued obligation to policyholders that relates to insured events, such as death or disability, measured as the present value of future policy benefits minus the present value of future **GAAP net premiums**.
- 2.9 **Lock-In**—A requirement to continue using original basis assumptions (as set at issue, acquisition, or prior redetermination).
- 2.10 **Market-Estimate Assumption**—An assumption that represents what a typical market participant would use in assessing the amount the participant would pay to acquire a given asset, or the amount the participant would require to assume a given liability (also known as an “exit market” price).
- 2.11 **Market Risk Benefit**—A contract or contract feature in a long-duration contract issued by an insurance entity that both protects the contract holder from other-than-nominal capital

market risk and exposes the insurance entity to other-than-nominal capital market risk by providing a benefit in excess of account value.

- 2.12 **Net GAAP Liability**—The **GAAP policy benefit liability** less any associated intangible balances, such as **DPAC**, **VOBA**, and **DSI**.
- 2.13 **Policy Benefit Liability**—An accrued obligation to policyholders that relates to the payment of future **costs** (including unpaid claim reserves for incurred and future claims) and amounts accrued for unearned revenue.
- 2.14 **Premium Deficiency**—A condition that exists when the sum of the **net GAAP liability** and the present value of future **gross premiums** is less than the present value of future benefits and expenses using current **best-estimate assumptions**.
- 2.15 **Risk of Adverse Deviation**—The risk that actual experience may differ from **best-estimate assumptions** in a manner that produces **costs** higher than assumed or revenues less than assumed.
- 2.16 **Value of Business Acquired (VOBA)**—The balance that arises in the application of GAAP purchase accounting as the difference between the reported value and the fair value of insurance contract liabilities, or comparable amounts determined in purchased insurance business combinations.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—The principles and methodologies used in determining financial statement amounts are generally prescribed by authoritative GAAP guidance. While insurance company GAAP financial statements are the responsibility of management, actuaries frequently participate in the processes of developing specific techniques for application of GAAP methods and selecting or considering assumptions used in the preparation of insurance company financial statements. Actuaries also frequently participate in developing both quantitative and qualitative disclosures related to financial statements, as required under GAAP. When participating in these activities, the actuary should be familiar with relevant company accounting policies as well as relevant accounting and actuarial literature.

Because GAAP financial statements are typically audited by internal and external auditors, the actuary should also refer to ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations*.

- 3.2 **Classification of Contracts, Features, and Benefits**—The actuary should confirm that each relevant contract, contract feature, and contract benefit has been classified under GAAP. When contributing to accounting classification, the actuary should take into account all relevant levels of classification (for example, insurance or investment, **market risk**

benefit, embedded derivative), applicable law, authoritative GAAP guidance, and the company's accounting policies.

- 3.3 **Types of Assumptions**—Two types of assumptions are used in the preparation of GAAP financial statements: **best-estimate assumptions** and **market-estimate assumptions**. The type of assumption used and whether the assumption includes any provisions for risk or uncertainty are dictated by the particular circumstances and applicable accounting guidance. The actuary should confirm that the proper type of assumption is used.

The actuary should identify which **best-estimate assumptions** are periodically reviewed and updated, and which assumptions are subject to **lock-in**.

- 3.3.1 **Best-Estimate Assumptions**—Certain GAAP financial statement items (for example, **liability for future policy benefits**) are measured using **best-estimate assumptions**. The actuary should choose assumptions that reflect management's assessment of emerging experience without provisions for risk or uncertainty. Where there is no emerging experience, the actuary should choose assumptions that reflect management's expectations of how experience will emerge.

Best-estimate assumptions may be established as the mode, mean, or median of a probability distribution. Other interpretations of best estimate are possible. The actuary should use actuarial judgment to determine which interpretation of best-estimate is appropriate for the circumstances and consistent with the applicable authoritative GAAP guidance.

When advising management on the selection of **best-estimate assumptions**, the actuary should take into account items such as the characteristics and magnitude of the company's business; the maturity of the company and its rate of growth; the prior experience of the company and the trends in that experience; and medical, economic, social, and technological developments that might affect future experience. The actuary's advice should take into account the company's actual recent experience data, if, in the actuary's judgment, it is relevant and credible.

The actuary should also consider supplementing available company-specific data with relevant industry data or data from other similarly situated companies. The actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 25, *Credibility Procedures*.

- 3.3.2 **Market-Estimate Assumptions**—Certain GAAP financial statement items (for example, derivatives, embedded derivatives, and **market risk benefits**) are measured at fair value. When the fair value of an item is not readily observable in the marketplace, the actuary should use **market-estimate assumptions** to determine a value for such items.

- 3.3.2.1 **Direct Observation**—The actuary should use **market-estimate assumptions** that reflect reliable market information to the extent reasonably observable. Some assumptions (for example, the market's

assessment of future interest rates) may be directly observable in published sources that are commonly quoted for market-based information. The general acceptance of such information by the market may serve to enhance the actuary's comfort with its reliability. The actuary should consider using multiple sources of information, when available, to help validate the reliability of the information.

- 3.3.2.2 **Inference**—When market information is not directly observable, the actuary should use **market-estimate assumptions** inferred from other observable information. Such information may be obtained by observing market transactions that imply the market's assessment of the assumption. For example, when making a **market-estimate assumption** for the volatility of one-year returns on a stock market index, the actuary may be able to deduce that assumption from observing the price at which options on that index are trading.
 - 3.3.2.3 **Relevant Information**—Often, the actuary will not be able to observe market transactions that incorporate some or all of the assumptions that are needed. In such situations, the actuary should use available observable information that may have relevance in determining market participants' assessment of the assumption that is required. For example, an actuary may have no means of directly observing the market's assessment of mortality for a specific group of lives. However, industry mortality data or mortality assumptions used by market participants in pricing transactions involving similar sets of lives may be observable. The actuary may consider this information to be relevant in establishing an assumption even though the information is not directly observable for the specific group of lives under consideration.
 - 3.3.2.4 **Anticipated Experience**—When there is insufficient observable information, the actuary may choose a **market-estimate assumption** based on the actuary's expectations for that assumption. Such assumptions should reflect market-observable information to the extent possible. When incorporating anticipated experience assumptions, the actuary should determine whether a market participant would require a margin to compensate for uncertainty. If so, the actuary should include an estimate of that margin based on the considerations discussed in sections 3.3.2.1 through 3.3.2.3.
- 3.4 **Discount Rate Assumptions**—When determining the discount rate assumptions for certain long-duration contracts (for example, upper-medium-grade fixed-income instrument yield used in calculating the **liability for future policy benefits**), the actuary should apply the principles of authoritative GAAP guidance and the guidance from this standard.

Where the actuary has limited or no observable market inputs to determine the discount rate assumptions, the actuary may need to extrapolate or interpolate. In such situations, the

actuary should refer to applicable sections of authoritative GAAP guidance on fair value measurement (ASC 820) and section 3.3.2 of this standard.

3.5 **Provision for Risk of Adverse Deviation**—In certain instances, GAAP requires a provision for the **risk of adverse deviation** in assumptions.

3.5.1 **Degree of Risk**—When determining a provision for **risk of adverse deviation**, the actuary should take into account the following:

- a. the degree of risk and uncertainty in that assumption in total and at each future duration;
- b. any policy features that reduce risk to the company, such as indeterminate premiums or dividends; and
- c. the magnitude and frequency of fluctuations in relevant historical experience, if available.

For assumptions that are relatively insignificant, the actuary may decide to add little or no provision for **risk of adverse deviation**.

3.5.2 **Relationship to Anticipated Experience**—When determining assumptions that include a provision for the **risk of adverse deviation**, the actuary should take into account whether such assumptions bear a reasonable relationship to the anticipated experience.

3.5.3 **Effect of Provision**—The provision for **risk of adverse deviation** should be such that the **net GAAP liability** is increased. If the direction of the effect of including a provision for **risk of adverse deviation** in an assumption is not clear, the actuary should attempt to determine the nature of a provision for **risk of adverse deviation** that is appropriate. If the actuary is unable to determine the directional effect, then the actuary need not include a provision for **risk of adverse deviation** in that assumption. The actuary should establish the individual provisions for **risk of adverse deviation** at a level that provides for an appropriate amount of **risk of adverse deviation** in aggregate.

3.6 **Risk Adjustment**—In certain instances, GAAP requires a risk adjustment (also referred to as risk margin or risk premium) in the fair value calculation. The risk adjustment is not a provision for **risk of adverse deviation**; rather, it represents the additional amount that a market participant would demand as compensation for bearing uncertainty in the cash flows. The actuary should use professional judgment when applying the risk adjustment.

3.7 **Internal Consistency**—When advising management on the selection of assumptions, the actuary should identify assumptions that, when taken together, reflect all pertinent areas of expected future experience relevant to the product, line of business, block of business, or cohort for which financial statement values are being calculated. The actuary should recommend assumptions that are internally consistent within each product, line of business,

block of business, or **cohort**. When assumptions are not dependent on specific product features or company specific considerations (for example, U.S. Treasury yields or volatility of a common equity index), the actuary should recommend assumptions that are consistent across product lines. The actuary should apply similar concepts of consistency in establishing provisions for **risk of adverse deviation** or risk adjustment. If the assumptions or other provisions are not internally consistent, the actuary should document any known inconsistencies.

- 3.8 Assumptions Selected by Another Party—When using assumptions selected by another party, the actuary should review the assumptions for reasonableness. If, in the actuary’s judgment, an assumption selected by the party is not reasonable or the actuary cannot determine whether it is reasonable, the actuary should refer to ASOP No. 41, *Actuarial Communications*.
- 3.9 Methods—Methods used to determine GAAP financial statement amounts are generally prescribed by authoritative GAAP guidance and will vary according to the specific literature that applies.

When developing detailed techniques for application of GAAP methods, the actuary should take into account the following:

- a. the substance of the relationship between the issuer of the policy and the policyholder;
- b. the classification of the contract (for example, short duration versus long duration, or insurance versus investment) or contract features (for example, **market risk benefits** or embedded derivatives);
- c. the expected life of the contract;
- d. the cash flow characteristics of the contract, including insurance company cash flows related to the contract but not directly associated with the contract provisions;
- e. any other items that are expected to have a material impact on the policy cash flows;
- f. the materiality of resulting financial statement amounts;
- g. the sensitivity of the resulting financial statement amounts to changes in assumptions; and
- h. the consistency with methods used for valuing contracts similar to those issued by the insurance company, if such information is available.

- 3.10 Financial Statement Disclosures—When contributing to disclosures related to GAAP financial statements, the actuary should comply with the prescribed requirements related to such disclosures. If the actuary’s contribution to these disclosures meets the definition of an actuarial communication, the actuary should follow the guidance in ASOP No. 41.

- 3.11 **Premium Deficiency Testing**—When testing for **premium deficiency**, the actuary should use **best-estimate assumptions**, current at the time of testing, without making provision for **risk of adverse deviation**, consistent with authoritative GAAP guidance. If a **premium deficiency** arises, the actuary should use current **best-estimate assumptions** to determine future changes in the **policy benefit liability**, consistent with authoritative GAAP guidance. For types of contracts where **lock-in** applies, the current **best-estimate assumptions** are then subject to **lock-in**.
- 3.12 **Recognition of Premiums**—Methods to recognize premiums in income are determined by authoritative GAAP guidance and vary by the type of contract. Where the recognition of **GAAP net premiums** is applicable to the measurement of contract assets and liabilities including intangible balances, the actuary should confirm that the recognition is consistent with the recognition of **gross premiums**.
- 3.13 **Simplifications and Approximations**—The actuary may, when appropriate, use assumptions, methods, and models that simplify calculations only if the results are reasonably expected not to differ materially from more detailed calculations. The actuary should seek guidance from accounting professionals on questions related to financial statement materiality.
- 3.14 **Reliance on Others for Data, Projections, Models, and Supporting Analysis**—The actuary may rely on data, projections, models, and supporting analysis supplied by others. When practicable, the actuary should review the data, projections, models, and supporting analysis for reasonableness and consistency. For further guidance, the actuary should refer to ASOP Nos. 23, 41, and 56, *Modeling*.
- 3.15 **Reliance on Another Actuary**—The actuary may rely on another actuary who has performed actuarial services related to the preparation or review of GAAP financial statements. However, the relying actuary should be reasonably satisfied that the other actuary is qualified to perform such services, that the actuarial service was performed in accordance with applicable ASOPs, and that the actuarial service performed is appropriate for the preparation or review of GAAP financial statements.
- 3.16 **Reliance on Expertise of Others**—An actuary performing actuarial services related to the preparation or review of GAAP financial statements may rely on the expertise of others (including actuaries not performing actuarial services) in other fields of knowledge for input that is relevant and useful to the GAAP financial statements. In determining the appropriate level of such reliance, the actuary should take into account the following:
- a. whether the individual or individuals upon whom the actuary is relying has expertise in the applicable field;
 - b. the extent to which the input provided has been reviewed or opined on by others with expertise in the applicable field, including any commonly known significant differences of opinion among others with expertise concerning aspects of the input that could be material to the actuary's use of such input; and

- c. whether there are legal, regulatory, professional, industry, or other standards that apply to the input supplied by others with expertise in the applicable field, and whether the input has been represented as having met such standards.
- 3.17 **Documentation**—The actuary should prepare and retain documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work. The amount, form, and detail of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report within the scope of this standard, the actuary should refer to ASOP Nos. 21, 23, 25, 41, and 56. In addition, the actuary should disclose the following, if applicable:
- a. the assumptions chosen and the information reflected in the assumptions (see section 3.3);
 - b. description of the discount rates used, including any methodology used to determine the discount rates (see section 3.4);
 - c. description of the provision for **risk of adverse deviation** (see section 3.5);
 - d. description of the risk adjustment, including the assumptions and methodology used (see section 3.6);
 - e. any known inconsistencies in the assumptions, provisions for **risk of adverse deviation**, or risk adjustment, and why these inconsistencies are appropriate (see section 3.7);
 - f. description of assumptions selected by another party and any review performed by the actuary (see section 3.8);
 - g. description of any techniques developed by the actuary to determine financial statement amounts (see section 3.9);
 - h. description of the actuary’s contributions in preparing financial statement disclosures (see section 3.10);
 - i. discussion of any recognition of **premium deficiency** (see section 3.11);

- j. description of the actuary's contributions in formulating recognition of premiums (see section 3.12);
 - k. discussion of any significant simplifications or approximations (see section 3.13);
 - l. extent of any reliance on others for data, projections, models, and supporting analysis (see section 3.14);
 - m. extent of any reliance on another actuary (see section 3.15); and
 - n. extent of any reliance on expertise of others (see section 3.16).
- 4.2 Additional Disclosures in an Actuarial Report—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law or authoritative GAAP guidance;
 - b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this standard.
- 4.3 Confidential Information—Nothing in this standard is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

The American Institute of Certified Public Accountants (AICPA) developed *Audits of Stock Life Insurance Companies (Audit Guide)* in 1972 with the cooperation of life insurance company accountants and actuaries. The *Audit Guide* represented the first effort by the accounting profession to establish GAAP for the life insurance industry. The Financial Accounting Standards Board (FASB) is now responsible for the determination of GAAP for companies whose financial statements are audited.

Until 2009, the FASB published Statements of Financial Accounting Standards (SFAS) to guide accountants on specific transactions. Once published, these SFAS were then considered to be GAAP. On September 15, 2009, the multiple SFAS were replaced by the FASB's Accounting Standards Codification (ASC), which became the standard for GAAP in the United States. The FASB now updates the ASC by issuing Accounting Standards Updates (ASUs).

GAAP standards for stock life insurance companies are primarily established by ASC Topic 944 "Financial Services, Insurance" but other topics are also relevant. Prior to GAAP codification, these standards could be found in SFAS No. 60, *Accounting and Reporting by Insurance Enterprises*, and SFAS No. 97, *Accounting and Reporting by Insurance Enterprises for Certain Long-Duration Contracts and for Realized Gains and Losses from the Sale of Investments*, among others. The FASB issued SFAS No. 60, which generally codified the concepts in the *Audit Guide*, in 1972. In 1987, the FASB issued SFAS No. 97, which (1) established GAAP for certain forms of insurance contracts not specifically addressed by SFAS No. 60, primarily universal life-type contracts; (2) established GAAP for investment contracts not involving a significant insurance component; and (3) revised GAAP for limited-payment contracts. In November 1990, the AICPA issued *Practice Bulletin 8*, providing guidance for certain questions related to SFAS No. 97.

In 1995, the FASB issued SFAS No. 120, *Accounting and Reporting by Mutual Life Insurance Enterprises and by Insurance Enterprises for Certain Long-Duration Participating Contracts*. This statement extended the requirements of SFAS No. 60 and SFAS No. 97 to mutual life insurers, established accounting for certain participating life insurance contracts of mutual life insurance enterprises (and stock life insurance subsidiaries of mutual life insurance enterprises), and permitted other stock life insurers to apply its provisions to participating life insurance contracts that meet the statement's conditions. At the same time, the AICPA provided further clarification of the accounting requirements for long-duration participating contracts in Statement of Position (SOP) No. 95-1, *Accounting for Certain Insurance Activities of Mutual Life Insurance Enterprises*. Other standards are also relevant, as is prevailing accounting practice

in areas not specifically addressed by an SFAS. Prior to the issuance of SFAS No. 120, mutual life insurers' statutory financial statements were, in practice, described as being in accordance with GAAP.

In 2018, the FASB issued ASU 2018–12, *Targeted Improvements to the Accounting for Long-Duration Contracts*. This amendment changed the measurement and disclosure requirements for insurance products and product features. The mandatory effective date for public entities filing statements with the Securities Exchange Commission (SEC) is January 1, 2023. For certain smaller companies and non-public companies, as defined by the FASB, the ASU will be effective for annual statements in 2025. Early adoption is permitted in 2022. This will give rise to multiple accounting standards being applicable at the same time.

Current Practices

The Academy promulgated *Financial Reporting Recommendations and Interpretations* applicable to GAAP for insurance companies to provide guidance to actuaries in this area before the formal appearance of ASOP No. 10 in 1989. Because of changes in GAAP resulting from SFAS No. 97, SFAS No. 120, and evolution in actuarial practice, ASOP No. 10 was revised in 2011. The 2011 revision removed interpretations of GAAP literature and focused the standard on those activities for which actuaries are most directly responsible. Since 2011, GAAP has continued to evolve, and it is appropriate once again to replace certain existing guidance and to promulgate a more generally applicable standard of actuarial practice with respect to insurance company GAAP financial statements.

The Insurance Experts Panel of the AICPA has developed certain interpretations of insurance accounting as promulgated by the FASB including for certain elements of ASU 2018–12. These interpretations have been added to the AICPA's *Audit and Accounting Guide, Life and Health Insurance Entities*.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the proposed revision of ASOP No. 10, *U.S. GAAP for Long-Duration Life, Annuity, and Health Products*, was issued in April 2022 with a comment deadline of June 30, 2022. Three comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 10 Task Force and the Life Committee of the Actuarial Standards Board (ASB) carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Life Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 10 Task Force, the ASB Life Committee, and the ASB. Also, the section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final ASOP.

GENERAL	
Comment	Two commentators suggested having the ASOP apply only to services relating to entities that have adopted ASU 2018-12, and temporarily keeping the existing version of ASOP No. 10 for services relating to entities that have yet to adopt ASU 2018-12.
Response	The reviewers acknowledge that entities are adopting ASU 2018-12 at different times but believe relevant GAAP guidance should be contained in one ASOP, and therefore made no change in response to this comment.
Comment	One commentator suggested removing the proposed expansion of ASOP No. 10 to include the review of financial statements in addition to preparation (or alternatively, providing expended guidance relating to review).
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested adding long-duration property and casualty contracts to the scope of the ASOP.
Response	The reviewers believe the scope is appropriate and made no change.
Comment	One commentator suggested except for sections 1.1 and 1.2, and the opening paragraph of section 2, references to “authoritative GAAP guidance” should be removed.
Response	The reviewers believe that the references to authoritative GAAP guidance are appropriate and made no change in response to this comment.
SECTION 2. DEFINITIONS	
Comment	One commentator suggested a definition of “assumption” be added.
Response	The reviewers disagree and made no change.

Section 2.1, Best-Estimate Assumption	
Comment	One commentator suggested revising section 2.1 as follows: “Best-Estimate Assumption—An assumption that produces a current estimate of expected performance with no provision for adverse deviation.”
Response	The reviewers disagree and made no change in response to this comment.
Section 2.3, Costs	
Comment	One commentator suggested removing the parenthetic clause “(to the extent allowable by authoritative GAAP guidance).”
Response	The reviewers disagree and made no change in response to this comment.
Section 2.4, Deferred Policy Acquisition Cost (DPAC) and 2.5, Deferred Sales Inducements (DSI)	
Comment	One commentator suggested inserting the word “intangible” before “asset” and inserting the phrase, “that were deferrable” at the end.
Response	The reviewers added the word “capitalized” to the definitions in response to this comment.
Section 2.6, GAAP Net Premium	
Comment	One commentator suggested rewriting section 2.6 in a way that satisfies GAAP both before and after the effective date of ASU 2018-12: “GAAP Net Premium—The portion of gross premium that provides for all costs except (a) those that are required to be charged to expense as incurred and (b) after the effective date of ASU 2018-12, policy acquisition costs.” After the effective date of ASU 2018-12, GAAP Net Premium may not exceed 100% of gross premium.
Response	The reviewers revised the definition in response to this comment.
Sections 2.6, GAAP Net Premium, and 2.7, Gross Premiums	
Comment	One commentator suggested defining these premium terms in plural and updating the references in section 3.5.2 (now section 3.4.2) to conform with other references.
Response	The reviewers agree and made the suggested changes.
Section 2.8, Liability for Future Policy Benefits	
Comment	One commentator suggested revising section 2.8 to read, “A liability of traditional insurance contracts, measured as the present value of future policy benefits minus the present value of future net premiums.”
Response	The reviewers clarified the language in response to this comment.
Section 2.9, Lock-In	
Comment	One commentator suggested rewriting section 2.9 to read, “A requirement to continue using an original basis assumption as set at issue or acquisition or, prior to the effective date of ASU 2018-12, upon redetermination for a premium deficiency. After the effective date of ASU 2018-12, this requirement applies only to certain discount rates and, if the reporting entity has elected, to non-level cost assumptions.”
Response	The reviewers clarified the definition in response to this comment.
Section 2.12, Net GAAP Liability	
Comment	One commentator suggested removing the reference to “intangible balances related to reinsurance.”
Response	The reviewers agree and made the change.

Section 2.13, Policy Benefit Liability	
Comment	One commentator suggested adding the following language to section 2.13: “The amount accrued for unearned revenue may or may not be shown separately in the company’s financial statements but is included in the policy benefit liability for purposes of this standard. Similarly, the amount accrued for unpaid claim reserves for incurred claims may or may not be shown separately in the company’s financial statements but is included in the policy benefit liability for purposes of this standard.”
Response	Rather than expanding this definition, the reviewers deleted the reference to financial statement placement.
Section 2.14, Premium Deficiency	
Comment	One commentator suggested adding a sentence for ASU 2018-12 changes to read: “After the effective date of ASU 2018-12, DPAC and maintenance costs are excluded from this determination.”
Response	The reviewers believe the guidance is sufficient as written and made no change.
Section 2.15, Risk of Adverse Deviation	
Comment	One commentator suggested deleting this definition and removing all references to “risk of” adverse deviation from later sections.
Response	The reviewers disagree and made no change.
Section 2.16, Value of Business Acquired (VOBA)	
Comment	One commentator suggested inserting “or liability” after “asset” since purchase accounting may require a VOBA liability in certain situations.
Response	The reviewers substituted “balance” for “asset” to cover liability situations in response to this comment.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator suggested deleting the “...company’s operating policies...” term from sections 3.1, 3.2, 3.3.1, and 3.5.1(b), citing concerns that many accounting decisions are made at the product-level.
Response	The reviewers replaced “operating policies” with “accounting policies” in response to this comment.
Section 3.2, Classification of Contracts, Features, and Benefits	
Comment	One commentator suggested deleting the reference to short-duration vs. long-duration classification since this determination is part of accounting policy. Additionally, this commentator suggested including a reference to company accounting policies.
Response	The reviewers modified this section in response to this comment.
Section 3.3.1, Best-Estimate Assumptions	
Comment	One commentator suggested substantial revisions to the guidance on “best estimate assumptions” to include the following: “The actuary should choose assumptions to represent management’s expectations of future cash flows including the effects of volatility. Depending on the probability distribution of target cash flows, best-estimate assumptions might be represented in a single scenario or in a range of scenarios. For example, death benefits of life insurance contracts depend on mortality which, in large numbers, approximates a normal distribution, such that a single set of expected mortality rates will produce substantially the same expected cash flows as a range of scenarios around mean mortality rates. In contrast, one-sided constraints on nonguaranteed benefits might require a range of scenarios to estimate the amount and timing of such benefits.”
Response	The reviewers believe that this section adequately addresses the need to consider multiple scenarios in the development of best-estimate assumptions and made no changes in response to this comment.

Section 3.3.2.4, Anticipated Experience	
Comment	One commentator suggested shortening section 3.3.2.4 and combining the last two sentences.
Response	The reviewers modified the language in response to this comment.
Section 3.4, Discount Rate Assumptions	
Comment	One commentator suggested consolidating guidance on discount rates and other assumptions.
Response	The reviewers disagree and made no change.
Section 3.5.2, Relationship to Anticipated Experience	
Comment	Several commentators suggested removing the example because it could be viewed as providing an interpretation of authoritative GAAP guidance.
Response	The reviewers agree and made the change.
Section 3.10, Financial Statement Disclosures	
Comment	One commentator suggested removing the second sentence because it was not applicable in all circumstances.
Response	The reviewers agree and made the change.
Section 3.11, Premium Deficiency Testing	
Comment	One commentator stated that the current draft appears to retain premium deficiency testing wording from the prior version of the ASOP, with room for ambiguity as to whether premium deficiency testing will continue.
Response	While premium deficiency testing will be limited under ASU 2018-12, the existing language was retained because the revised ASOP No. 10 will cover pre- and post-ASU 2018-12 adoption. Authoritative GAAP guidance will determine whether premium deficiency testing must be performed.
Section 3.12, Recognition of Premiums	
Comment	One commentator suggested omitting the list of balances.
Response	The reviewers agree and modified the language in response to this comment.
Comment	Two commentators suggested modifications to this section because premium recognition methodologies are unlikely to be the actuary's responsibility.
Response	The reviewers modified the language in response to these comments.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator suggested making changes to this section to align with the suggested changes to section 3.2.
Response	The reviewers agree and made changes throughout section 4.1 to align with changes in sections 2 and 3.



**Actuarial Standard
of Practice
No. 11**

**Treatment of Reinsurance or Similar Risk Transfer Programs
Involving Life Insurance, Annuities, or Health Benefit Plans
in Financial Reports**

**Developed by the
Task Force to Revise ASOP No. 11 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
April 2021**

Doc. No. 199

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April 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Treatment of Reinsurance or Similar Risk Transfer Programs Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Revision of Actuarial Standard of Practice (ASOP) No. 11

This document contains a revision of ASOP No. 11, now titled *Treatment of Reinsurance or Similar Risk Transfer Programs Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports*.

History of the Standard

The ASB adopted the original ASOP No. 11, then titled *The Treatment of Reinsurance Transactions in Life and Health Insurance Company Financial Statements*, in 1989. Prior to adoption of the standard, Recommendation No. 4 and Interpretation No. 4-A of the *Financial Reporting Recommendations and Interpretations* of the American Academy of Actuaries covered certain aspects of generally accepted accounting principles (GAAP) financial reporting on reinsurance ceded by life and health insurance companies. The original standard superseded Recommendation No. 4 and Interpretation No. 4-A.

By the early 2000s, reinsurance practice and related accounting guidance had evolved significantly for both GAAP and statutory reporting. As a result, in 2005 the ASB decided to revise ASOP No. 11. In the 2005 revision, the scope was changed to apply to reinsurance transactions involving life and health insurance, rather than to life and health insurance company financial statements, as well as to life and health insurance reinsured by property/casualty companies. Furthermore, if a company entered into a transaction that involved reinsurance of both life/health insurance and property/casualty insurance, the 2005 revision stated that the actuary should determine whether ASOP No. 11, ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, or aspects of both are most appropriate to determine the proper treatment of the transaction.

Since 2005, significant new guidelines and requirements for life insurance policies and annuity contracts have emerged, including the following:

General Changes

- Dodd–Frank Wall Street Reform and Consumer Protection Act;
- Covered Agreement with the European Union; and
- Covered Agreement with the United Kingdom.

GAAP Changes

- GAAP – Accounting Standard Update 2018-12 (ASU 2018-12).

Statutory Changes

- Principle-based reserving (PBR) and the accompanying *Valuation Manual*;
- Actuarial Guideline 48, *Actuarial Opinion and Memorandum Requirements for the Reinsurance of Policies Required to be Valued under Sections 6 and 7 of the NAIC Valuation of Life Insurance Policies Model Regulation (Model 830)*, and Term and Universal Life Insurance Reserve Financing Model Regulation (Model 787);
- Amendments and recent developments in the Credit for Reinsurance Model Law and Regulation and the Nonadmitted and Reinsurance Reform Act;
- State by state requirements for the appointed actuary; and
- Own Risk and Solvency Assessment (ORSA).

New requirements and practices related to health benefit plans have also emerged, including the following:

- The Patient Protection and Affordable Care Act (ACA);
- Increased prevalence of risk sharing with providers;
- Increased prevalence of governmental entities assuming insurance risk;
- Increased use of reinsurance for certain health lines of business, for example, long-term care and ACA-compliant business; and
- A greater variety of entities assuming health insurance risk.

The guidance in the standard is being updated to reflect emerging practices driven by this new environment.

Exposure Draft

The exposure draft was issued in November 2019 with a comment deadline of June 30, 2020. Two comment letters were received and considered in making changes that are reflected in this ASOP.

Notable Changes from Exposure Draft

Notable changes made to the exposure draft are summarized below. Notable changes do not include changes that were made to improve readability, clarity, or consistency.

1. The title of the standard was changed to reflect the expanded scope.
2. In section 1.2, an edit was made to clarify that similar risk transfer programs were included in scope. To illustrate how this expansion applies to self-insured programs an example was added.
3. In section 2, definitions of “assuming entity” and “ceding entity” were added, and the definitions of “nonproportional feature,” “reinsurance agreement,” and “reinsurance program” were clarified.
4. Section 3.2, Financial Reports, was broken up into its two constituent parts, now section 3.2, Impact of Risks Reinsured, and section 3.3, Impact of Risks Retained.
5. Section 3.3(c) was modified to clarify that assumptions need to be reasonable not just in aggregate but also individually.
6. A new section 3.4 was added to consolidate guidance on modeling.
7. In section 3.4, guidance now in ASOP No. 56, *Modeling*, was replaced by references to ASOP No. 56.
8. Section 3.9(c) was expanded to recognize that reinsurance performance can be assured via collateral or other forms of security.

Notable Changes from the Existing Standard

A cumulative summary of the notable changes from the existing standard are summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. The title of the standard was changed to reflect the expanded scope.
2. In section 1.2, the scope was clarified and expanded both to include risk transfer programs similar to reinsurance and to apply to internal and external financial reports, rather than only financial statements.
3. The guidance related to health benefit plans was reviewed and expanded throughout section 3.
4. Guidance was clarified and expanded throughout section 3.2.

5. Guidance was added on the financial reporting aspects of nonguaranteed reinsurance elements in section 3.2(a).
6. Guidance was added on the impact of risks retained in section 3.3.
7. Guidance on modeling was added throughout the standard.
8. Guidance related to counterparty risk was added in section 3.5.
9. Guidance was added on the impact of nonguaranteed elements of the policies being reinsured in sections 3.2, 3.7, 3.9(a), and 3.9(b).
10. Disclosures were added in sections 3 and 4 to match the clarifications and expansions made in section 3.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in April 2021 to adopt this standard.

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Task Force to Revise ASOP No. 11

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Life Committee of the ASB

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 11

**TREATMENT OF REINSURANCE OR SIMILAR RISK TRANSFER PROGRAMS
INVOLVING LIFE INSURANCE, ANNUITIES,
OR HEALTH BENEFIT PLANS IN FINANCIAL REPORTS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to **financial reports** that reflect **reinsurance programs** that involve life insurance, annuities, or **health benefit plans**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services in connection with preparing, determining, analyzing, or reviewing **financial reports** for internal or external use that reflect reinsurance or similar risk transfer programs on life insurance, annuities, or **health benefit plans**. Throughout this standard, the word “preparing” includes determining, analyzing, and reviewing. If the actuary is performing actuarial services that involve reviewing **financial reports** for internal or external use that reflect **reinsurance programs**, the actuary should use the guidance in section 3 to the extent practicable.

To the extent that life insurance, annuities, or **health benefit plans** are reinsured by a property/casualty company or through risk financing systems (such as government-sponsored reinsurance pools and programs, or securitization products), this standard applies. To the extent that self-insured plans buy third-party insurance, such as employer stop-loss insurance, this standard applies. To the extent that a self-insured plan is a stand-alone product with no third-party involvement, this standard does not apply.

If a **reinsurance program** includes property/casualty coverages, along with life insurance, annuities, or **health benefit plans**, the actuary should use professional judgment to determine whether this standard; ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*; or aspects of all three standards apply.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed in connection with **financial reports** issued on or after December 1, 2022.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the standard.

- 2.1 **Assuming Entity**—The entity accepting insurance risk in a **reinsurance agreement**, such as an insurer accepting risk from a stop-loss program, a reinsurer accepting risk from an insurance company, or a retrocessionaire accepting risk from a reinsurer.
- 2.2 **Ceding Entity**—The entity that is transferring insurance risk in a **reinsurance agreement**, such as an employer transferring risk under a stop-loss arrangement, an insurance company transferring risk to a reinsurer, or a reinsurer transferring risk to a retrocessionaire.
- 2.3 **Collectability of Reinsurance Proceeds**—The ability of the **counterparty** to obtain funds owed to it according to the terms of the **reinsurance program**.
- 2.4 **Counterparty**—Another entity involved in the **reinsurance program** including, but not limited to, **ceding entity**, **assuming entity**, or **service provider**.
- 2.5 **Counterparty Risk**—The risk that any **counterparty** does not fulfill its contractual obligations.
- 2.6 **Financial Report**—A report that conveys the performance or experience of an **assuming entity** or **ceding entity** at a specific point in time or over an accounting or measurement period. The **financial report** may be based on any financial reporting regime appropriate to the assignment. Examples of **financial reports** include, but are not limited to, statutory financial statements, own risk and solvency assessment (ORSA) reports, enterprise risk management (ERM) reports, GAAP financial statements, asset adequacy analysis reports, and experience study reports.
- 2.7 **Health Benefit Plan**—A contract, such as an insurance policy, or other financial arrangement providing medical, prescription drug, dental, vision, disability income, long-term care, critical illness, accidental death and dismemberment, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the risk-bearing entity.

- 2.8 **Model**—A simplified representation of relationships among real world variables, entities, or events using statistical, financial, economic, mathematical, non-quantitative, or scientific concepts and equations.
- 2.9 **Net Liabilities**—Reserves (net of reinsurance reserve credits), plus any other liabilities (such as amounts due the **assuming entity**), less any other assets arising from a **reinsurance program** (such as amounts receivable from the **assuming entity** or deferred acquisition costs), for the reinsured block of business.
- 2.10 **Net Retained Business**—The portion of the business written or assumed by the **ceding entity** that is not subject to the **reinsurance program**.
- 2.11 **Nonguaranteed Reinsurance Elements**—Any premium, charge, or benefit within a **reinsurance program** that affects reinsurance costs or values, is not guaranteed in the **reinsurance program**, and can be changed at the discretion of the **assuming entity** or **service provider**. A **nonguaranteed reinsurance element** may provide a more favorable value to the **ceding entity** than an element that is guaranteed in the policy. Examples of **nonguaranteed reinsurance elements** are the premiums in a yearly renewable term **reinsurance agreement** that are defined as nonguaranteed and **service provider** fees that can be contractually changed.
- 2.12 **Nonproportional Feature**—A feature of a **reinsurance agreement** that makes the **assuming entity's** loss experience disproportionate to that of the **ceding entity**, such as the **assuming entity** agreeing to reimburse the **ceding entity** for losses above a predetermined aggregate level and up to an aggregate reimbursement limit. Other examples of such **nonproportional features** include aggregate claim limits, deductibles, limited coverage periods, stop-loss coverage, layers of claims covered (such as claims starting and ending at defined levels), and separate but related **reinsurance agreements** (i.e., where the results of one **reinsurance agreement** affect the operation of the other).
- 2.13 **Reinsurance Agreement**—An agreement whereby one or more elements of risk contained in insurance contracts or self-insured benefit plans are transferred from a **ceding entity** to an **assuming entity** in return for some consideration.
- 2.14 **Reinsurance Assumed**—Reinsurance as it affects the **assuming entity** under a **reinsurance agreement**.
- 2.15 **Reinsurance Ceded**—Reinsurance as it affects the **ceding entity** under a **reinsurance agreement**.
- 2.16 **Reinsurance Program**—The combination of the **reinsurance agreement(s)**, its associated service contracts, and their implementation. Activities under a **reinsurance program** include but are not limited to sales, underwriting, claims adjudication, and administration, which might be affected by volume-based or performance-based fees or commissions. When using the term **reinsurance program** in this standard, the term will also include

reference to similar risk transfer programs, such as employer stop-loss insurance, government-sponsored reinsurance pools and programs, or securitization products.

- 2.17 **Service Provider**—An entity other than the **assuming entity** and **ceding entity** providing contractual services related to a **reinsurance agreement**, such as reinsurance intermediaries, managing general underwriters, captive manager, third-party administrators (TPAs), claims managers, investment advisors, investment managers, information technology providers (such as cloud data services and credit reporting agencies), and trustees.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Reinsurance Program Features**—When preparing **financial reports**, the actuary should take into account aspects of relevant **reinsurance program(s)**, including the following:
- a. the risks transferred in the **reinsurance agreement**;
 - b. the structure of the **reinsurance agreement**. The structure includes but is not limited to the type of the **reinsurance agreement** (for example, coinsurance), whether the risk(s) transferred are in the form of a proportional or **nonproportional feature**, and the parameters (quota share percentage, issue age, attachment point, etc.) associated with the reinsured portion(s) of the business; and
 - c. the responsibilities of any **service providers**, if applicable.
- 3.2 **Impact of Risks Reinsured**—When analyzing the impact of risks reinsured under a **reinsurance program**, the actuary should take into account the following:
- a. how the terms and conditions of the **reinsurance program**, including **nonguaranteed reinsurance elements**, impact the expected cash flows. Examples of items that may impact cash flows include but are not limited to premiums, risk fees, allowances, benefits, expenses, experience refunds, investment income, modified coinsurance reserve adjustments, **nonproportional features**, policyholder dividends and other nonguaranteed elements of the policies being reinsured, provider risk-sharing agreements, termination provisions of the **reinsurance agreement**, and volume or other bonuses (including any contingent payments);
 - b. how activities that are performed by **service providers** impact reinsurance cash flows;
 - c. penalties, if any, for not performing as required under the terms and conditions of the **reinsurance program**, such as interest penalties, and the likelihood of such penalties;

- d. the impact on reinsurance cash flows, if any, of the contractual activities performed by the **assuming entity** or the **ceding entity** participating in the **reinsurance agreement** (for example, the ability of the **assuming entity** to influence the timing, size, and nature of potential rates charged by the **ceding entity** to policyholders, or claims handling practices, or the ability of the **ceding entity** to change nonguaranteed elements of the policies being reinsured);
 - e. the impact of **counterparty risk** to a **reinsurance program** on reinsurance cash flows (for more on **counterparty risk**, see section 3.5);
 - f. how the **collectability of reinsurance proceeds** associated with the **reinsurance program** impacts cash flows. Considerations include but are not limited to the ability of the **assuming entity** to meet its obligations, the impact of state or federal law on the **collectability of reinsurance proceeds**, the ability of the **assuming entity** to interpret direct policy language to impact the amount of claims reimbursed, or the ability of the **ceding entity** to meet its obligations under the **reinsurance program**;
 - g. the impact of incentives or disincentives, if any, on the performance of the **reinsurance program** activities (for example, compensation of employees, fees to third parties, or the terms and conditions of the **reinsurance program**);
 - h. the impact on reinsurance cash flows of the investment policy of the holder or manager of the assets under the **reinsurance agreement**. When determining whether the investment policy impacts cash flows, the actuary should take into account the following:
 1. the contractual, legal, market, or regulatory constraints;
 2. the impact of deviation from the expected investment policy on cash flows; and
 3. influence of sections 3.2.(h)(1) and 3.2(h)(2) on changes to investment policies in the future, such as the ability to reinvest future cash flows in similar assets;
 - i. the impact on reinsurance cash flows of operational risks such as poor training, inadequate or malfunctioning technology, unreliable data, and poor processes; and
 - j. the impact of the **reinsurance program** on reinsured business as reflected in the **model(s)** used in preparing the **financial report** and the consistency of this impact relative to other **models**, both past and current, used by the entity.
- 3.3 **Impact of Risks Retained**—When analyzing the impact of risks retained under the terms and conditions of any **reinsurance program**, the actuary should take into account the following:

- a. the potential impact of the existence of a **reinsurance program** on assumptions associated with the **net retained business**. For example, policies below an excess of retention **reinsurance program** may be managed differently due to the presence of reinsurance on the excess of retention business, or the **assuming entity** may have the ability to influence the timing, size, and nature of potential rates charged by the **ceding entity** to all policyholders;
- b. the consistency of assumptions and methods regarding risks associated with the **net retained business** that are impacted by the existence of a **reinsurance program** with other assumptions and methods used in the current and prior **financial reports**. When the actuary uses different assumptions or methods in the current **financial report**, the actuary should document those differences and the rationale for the differences;
- c. the reasonableness, individually and in aggregate, of assumptions regarding risks associated with the **net retained business** that are impacted by the existence of a **reinsurance program**. When the actuary uses different assumptions before and after reflecting the **reinsurance program** in the **financial reports**, the actuary should document those differences and the rationale for doing so;
- d. the impact of the **reinsurance program** on the investment policy of the holder or manager of the assets associated with the **net retained business**. When determining whether the **reinsurance program** impacts the investment policy, the actuary should take into account the following:
 1. the contractual, legal, market, or regulatory constraints;
 2. the impact of deviation from the expected investment policy on cash flows; and
 3. the influence of sections 3.3(d)(1) and 3.3(d)(2) on changes to investment policies in the future, such as the ability to reinvest future cash flows in similar assets;
- e. the impact of the **reinsurance program** on **net retained business** as reflected in the **model(s)** used in preparing the **financial report** and the consistency of this impact relative to other **models**, both past and current, used by the entity; and
- f. the impact on the cash flows of the **net retained business** caused by the contractual activities performed by the **assuming entity** and **ceding entity** participating in the **reinsurance agreement** (for example, the ability of the **assuming entity** to influence the timing, size, and nature of potential rates charged by the **ceding entity** to policyholders, or claims handling practices).

In addition to the guidance in sections 3.2 and 3.3, the actuary should follow the financial reporting regime's requirements for taking account of any credit in the **financial report** for the risk mitigation impact of the **reinsurance program**.

3.4 **Models Used in Preparing Financial Reports**—When preparing **financial reports**, the actuary should take into account the implications of modeling the **reinsurance program** including:

- a. how the terms and conditions of the **reinsurance program** are reflected in the **model(s)** or the implementation of the **model(s)**. When doing so, the actuary should refer to ASOP No. 56, *Modeling*; and
- b. how the assumptions used in the **model(s)**:
 1. appropriately reflect the terms and conditions of the **reinsurance program**. When making this determination, the actuary should identify and take into account the following:
 - i. the purpose of the assignment;
 - ii. the guidance in ASOP No. 23, *Data Quality*, on the consideration and the choice of data underlying the assumptions; and
 - iii. the guidance in ASOP No. 25, *Credibility Procedures*, on the consideration of the credibility of data underlying the assumptions;
 2. contain appropriate margins, for example, for uncertainty, statistical error, or conservatism; and
- c. the guidance in ASOP No. 56 related to assumptions used in the **model(s)**.

3.5 **Assessing and Analyzing the Impact of Counterparty Risk**—The actuary should take into account **counterparty risks** that could impact the **financial report** including, but not limited to, the following:

- a. the ability of an entity to meet its obligations under the **reinsurance program**;
- b. the **collectability of reinsurance proceeds** or lag time in collection of any funds owed under the **reinsurance program**, such as reinsurance claims or reinsurance premiums;
- c. performance risk of **counterparties** who are performing specific services related to the **reinsurance agreement**, such as a **counterparty** not performing to established guidelines, a TPA not paying claims on time, or an investment manager not adhering to investment guidelines;

- d. any collateral that has been posted in relation to the **reinsurance agreement** and its amount, quality, and permitted uses, as defined by regulation and the **reinsurance agreement**;
- e. the measurement of the effectiveness of the procedures designed to identify or mitigate the **counterparty risk**;
- f. the **counterparty's** financial health, stability, enterprise risk management (ERM) practices, and changes therein. Examples include financial strength ratings, investment policy, required capital, capital, and the risk level of the types of business written or assumed;
- g. any **counterparty** contractual features or risk management policies that might affect the risk, such as parental guarantees, letters of credit, or alternative coverage; and
- h. the holder or manager, if different from the owner, of the assets under the **reinsurance agreement** and the implications of this arrangement.

3.6 **Assessing and Analyzing the Risks Being Transferred in a Reinsurance Program**—When preparing a **financial report** to assess and analyze the risks being transferred in a **reinsurance program**, the actuary should take into account the terms and conditions of the **reinsurance program**. The actuary should also take into account how the risks being transferred compare to the risk appetite of the **ceding entity** or **assuming entity**, as applicable, including the following:

- a. a comparison of the original goals for the **reinsurance program** versus the **reinsurance program's** actual performance;
- b. the degree of risk mitigation or acceptance that reflects the risk tolerances and risk appetite as of the time of the **financial report**; and
- c. changes in the risk mitigation or acceptance goals.

When preparing a **financial report** to assess and analyze a **reinsurance program** for the purposes of ERM or ORSA, the actuary should refer to ASOP Nos. 46, *Risk Evaluation in Enterprise Risk Management*, and 47, *Risk Treatment in Enterprise Risk Management*.

3.7 **Treatment of Reinsurance Risks**—When preparing values related to a **reinsurance program** in a **financial report**, the actuary should take into account the purposes of the **financial report**, factoring in the applicable accounting and regulatory requirements or guidance, as well as the terms and conditions of the **reinsurance program** and its associated risks. Examples of risks associated with the **reinsurance program** include but are not limited to **counterparty risk**, lack of **reinsurance program** controls, untimely payments, volatility of experience refunds, **nonguaranteed reinsurance elements**,

nonguaranteed elements of the policies being reinsured, the structure of the **reinsurance agreement**, and investment philosophy.

3.7.1 **Treatment of Reinsurance Ceded**—When preparing values related to **reinsurance ceded**, the actuary should do so without relying upon the values of financial statement items held by the **assuming entity**. The actuary may use data provided by the **assuming entity** in calculating financial statement values (see ASOP No. 52, *Principle-Based Reserves for Life Products under the NAIC Valuation Manual*, and sections 3.11-3.15 of this standard). Because the **ceding entity** and the **assuming entity** each establish and test statement liabilities and assets independently, it is possible for the value of the **net liabilities** held by the **ceding entity**, plus those held by the **assuming entity** on a reinsured contract, to be more or less than the amount that would have been held if the **ceding entity** had not reinsured the contract. For example, the two **counterparties** may have different expectations for assumptions that impact liabilities or investment returns.

3.7.2 **Treatment of Reinsurance Assumed**—The actuary should take into account the following regarding the treatment of **reinsurance assumed**:

- a. the features and risks of the business assumed, such as lack of control over the **ceding entity's** investment philosophy, nonguaranteed elements of the policies being reinsured, other risk-sharing arrangements, dividends, marketing, underwriting practices, or claims adjudication and management practices, or in-force management practices; and
- b. the features and risks of the **reinsurance program** referenced in sections 3.2 and 3.3.

The actuary should also consider whether adjustments to data are needed based on the quality and credibility of data when preparing a **financial report** or other information exchanged between the **counterparties**. When adjusting the data, the actuary should refer to ASOP Nos. 23 and 25 for guidance.

3.8 **Risk of Termination of Reinsurance Programs**—When preparing **financial reports**, the actuary should reflect the following:

- a. the impact of the potential termination of **reinsurance programs** on the obligations of the **counterparties**, including post-termination obligations;
- b. how the following factors affect the risk of termination including:
 1. the terms and conditions of the **reinsurance program**;
 2. the regulatory and financial reporting regime governing the **financial report**;

3. the known business practices of the **counterparties**; and
4. the current and potential internal and external environments faced by the **counterparties**.

Examples of potential termination events include but are not limited to the following:

- i. **reinsurance agreements** that end prior to underlying risk terminating;
- ii. termination due to regulatory intervention;
- iii. termination due to inability of a **ceding entity** to pay reinsurance premiums;
- iv. termination due to an **assuming entity** exercising rights to change the **reinsurance agreement**;
- v. recapture or commutation specified or permitted by the **reinsurance agreement**;
- vi. termination due to the financial difficulties of an **assuming entity**;
- vii. partial termination of **reinsurance agreement** due to a partial recapture;
- viii. partial termination of **reinsurance agreements** due to a **ceding entity** losing its license; and
- ix. termination due to inability of **service providers** to perform as specified in their agreement.

The actuary should consider performing scenario testing to quantify the impact of a potential termination of a **reinsurance program** on a **financial report**.

- 3.9 **Additional Liabilities, Reserves, or Allocation of Capital**—The actuary should consider establishing additional liabilities, reserves, or allocation of capital based upon the terms and conditions of the **reinsurance program**. When considering this issue, the actuary should use assumptions consistent with the purpose of the **financial report**. Examples of situations where additional liabilities, reserves, or allocation of capital may be needed include but are not limited to the following:

- a. an **assuming entity** having the right to change **nonguaranteed reinsurance elements** on in-force business without a corresponding right by the **ceding entity** to change nonguaranteed elements of the policies being reinsured or terminate the **reinsurance agreement**;
- b. recapture by a **ceding entity** due to an **assuming entity** changing **nonguaranteed reinsurance elements** on in-force business; or

- c. an **assuming entity's** inability to post the amount of collateral or level of security required by agreement or regulation.
- 3.10 **Accounting Guidance**—When preparing values in the **financial report** that reflect the terms of a **reinsurance program**, the actuary should take into account applicable accounting guidance. The actuary should determine whether a particular **reinsurance agreement** qualifies as reinsurance for statutory, GAAP, or other purposes, and how this may affect the accounting treatment.
- 3.11 **Experience Analysis**—When preparing a **financial report** to analyze the actual-to-expected financial experience of a **reinsurance agreement**, the actuary should establish a baseline to be used as a source of comparison. An example of a baseline is the results of the final **model(s)** used in analyzing the reinsurance proposal at the time of entering the **reinsurance agreement**.
- Examples of how to analyze actual-to-expected financial experience include loss ratios and actual-to-expected mortality experience. The actuary should use professional judgment and consider the needs of the principal when deciding which form of analysis to choose.
- 3.12 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP Nos. 23, 41, *Actuarial Communications*, and 56, and, where appropriate, ASOP Nos. 10, *Methods and Assumptions for Use in Life Insurance Company Financial Statements Prepared in Accordance with U.S. GAAP*, or 52, for guidance. The actuary should disclose the extent of any such reliance.
- 3.13 **Reliance on Assumptions or Methods Selected by Another Party**—When relying on assumptions or methods supplied by another party, the actuary should review the assumptions or methods for reasonableness and consistency. For further guidance, the actuary should refer to ASOP No. 41. The actuary should disclose the extent of any such reliance.
- 3.14 **Reliance on Models Developed by Others**—If the actuary relies on a **model(s)** designed, developed, or modified by others, such as a vendor or colleague, the actuary should review the **model(s)** for compliance with the applicable sections of this standard and with ASOP No. 56 as it applies to **models** developed by others. The actuary should document and disclose the extent of any such reliance. If the actuary adjusts the **model(s)**, the actuary should document and disclose the adjustments.
- 3.15 **Reliance on Another Actuary**—The actuary may rely on another actuary who has provided input to the **financial report**. However, the relying actuary should be reasonably satisfied that the other actuary is qualified to supply information for the **financial report**, the information supplied was compiled in accordance with applicable standards, and the information supplied is appropriate for the particular **financial report** being prepared. The actuary should disclose the extent of any such reliance.

3.16 **Reliance on Expertise of Others**—An actuary may rely on the expertise of others (including actuaries not performing actuarial services) in the fields of knowledge used in preparing the **financial report**. In determining the appropriate level of reliance, the actuary should take into account the following:

- a. whether the individual or individuals upon whom the actuary is relying have expertise in the applicable field;
- b. the extent to which the input provided for the **financial report** has been reviewed or opined on by others with expertise in the applicable field;
- c. whether there are legal, regulatory, professional, industry, or other standards that apply to the input for the **financial report** supplied by others with expertise in the applicable field, and whether the input has been represented as having met such standards. For example, it is often the case in reinsurance that an actuary relies upon an accountant or a lawyer to determine whether a **reinsurance agreement** meets regulatory requirements to be accounted for as reinsurance; and
- d. whether the input to the **financial report** supplied was relevant and useful to the purpose of the **financial report**.

The actuary should disclose the extent of any such reliance.

3.17 **Documentation**—In addition to the documentation requirements throughout the rest of section 3, the actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing such documentation, the actuary should prepare documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 10, 23, 25, 41, 46, 47, 52, and 56. In addition, the actuary should disclose the following in such actuarial reports, as applicable:

- a. features of the **reinsurance program(s)** being analyzed in the **financial report**, as discussed in section 3.1;

- b. impacts on the **financial report** caused by the terms of the **reinsurance program(s)** or the practices of any of the parties to the **reinsurance program(s)** as discussed in sections 3.2 and 3.3;
- c. assumptions used in the **financial report** that are inconsistent either across time or different lines of business, and an explanation for the inconsistency, as discussed in sections 3.3(a), 3.3(b), and 3.3(c);
- d. description of the **model(s)** and assumptions, including a summary of how the **model(s)** and assumptions meet the conditions in sections 3.2(j), 3.3(e), and 3.4;
- e. unresolved concerns the actuary has about reinsurance information (for example, reinsurance settlement data, in-force information, and legal agreements) that, in the actuary's professional judgment, could have an effect on the actuarial work product, as discussed in sections 3.2(i), 3.5, and 3.7;
- f. the impact of the following risks on the results presented in the report:
 - i. variation in assumptions or methods over time, if any, as discussed in sections 3.3(a) and 3.3(b) ;
 - ii. **nonguaranteed reinsurance elements** in a **reinsurance agreement**, as discussed in sections 3.2(a), 3.2(d), 3.7, 3.9(a), and 3.9(b);
 - iii. **counterparty risk**, as discussed in section 3.2(e) and 3.5;
 - iv. non-performance of **service providers**, if any, as discussed in sections 3.2(b), 3.2(g), 3.2(h), 3.3(d), and 3.5; and
 - v. termination of **reinsurance programs**, as discussed in section 3.8.
- g. the potential impact of risks associated with the **reinsurance program**, as discussed in sections 3.2, 3.3, 3.5, 3.6, 3.7, 3.8, and 3.9;
- h. additional reserves that needed to be established due to the nature of the **reinsurance agreement** and the rationale for such additional reserves, as discussed in section 3.9;
 - i. the extent of reliance on data or other information supplied by others, if any, used in preparing the **financial report**, as discussed in section 3.12;
 - j. the extent of reliance on others for assumptions or methods used in **financial reports**, including any adjustments made to assumptions or methods, and the steps taken to review the assumptions or methods for reasonableness and consistency, as discussed in section 3.13;

- k. the extent of reliance on **model(s)** developed by others, if any, as discussed in section 3.14;
 - l. adjustments made to the **model(s)** supplied by another party and upon which the actuary is relying, as discussed in section 3.14;
 - m. the extent of reliance on other actuaries, if any, for input used in preparing the **financial report**, as discussed in section 3.15; and
 - n. the extent of reliance on the expertise of others, if any, for input used in preparing the **financial report**, as discussed in section 3.16.
- 4.2 Additional Disclosures in an Actuarial Report—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law;
 - b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary’s professional judgment, the actuary has deviated materially from the guidance of this standard.

Appendix 1

Background and Current Practices

Note: The following material is provided for informational purposes and is not part of the standard of practice.

Background

Actuarial practice with respect to reinsurance, as well as the complexity of reinsurance programs, has evolved significantly since the 2005 version of ASOP No. 11, the last time the standard was adopted. Significant new laws, regulations, and accounting requirements for life insurance policies, annuity contracts, and health benefit plans have also emerged. These refinements have led to this revision of ASOP No. 11.

Financial reports involving reinsurance must comply with many accounting requirements, laws, and regulations. These requirements relate to, for example, whether the reinsurance agreement should be accounted for as reinsurance or as a deposit, the nature and amount of collateral that is required for a reserve credit to be allowed in the financial report, and the types of assets that must back certain kinds of reserves.

The presentation of the components of the net liabilities may vary under different accounting principles. For example, reserves other than principle-based reserves (PBR) are shown net of reinsurance ceded in statutory financial reports. PBR are currently calculated pre-reinsurance, then post-reinsurance, with the difference being the reinsurance reserve credit. Reserves are generally presented on a gross basis before reinsurance in GAAP financial reports with the reinsurance credit reported as an offsetting asset. This difference in presentation affects the analysis that goes into a financial report.

Requirements relating to risk transfer must also be met in order to receive reinsurance accounting treatment under the requirements of Statutory Statement of Accounting Principles (SSAP) No. 61R, which incorporates related guidance in Appendices A-785 and A-791 of the *NAIC Accounting Practices and Procedures Manual*.

Statutory accounting requires any increase in after-tax initial surplus impact from the reinsurance of an existing block of business to be reflected directly through surplus at the inception of the reinsurance agreement. The resulting impact to surplus is then amortized into income over the life of the reinsured business. If the initial impact of a reinsurance program is negative, that impact flows immediately through earnings.

While assumption and indemnity reinsurance are both labeled as reinsurance, they are two different forms of transactions. With indemnity reinsurance, the policyholder's relationship remains with the ceding entity. An assumption reinsurance transaction is a sale of business such that the policyholder's direct relationship is with the "assuming entity." This difference results in a different financial statement presentation for the two types of transactions. The presentation in

financial reports differs for assumption reinsurance agreements and indemnity reinsurance agreements. Under indemnity reinsurance agreements, the ceding entity remains legally responsible for all policyholder obligations of the reinsured policies. The assuming entity indemnifies, or protects, the ceding entity against one or more of the risks in the reinsured policies. Under an assumption reinsurance agreement, the ceding entity is relieved of responsibility for the policies reinsured, and the contracts are accounted for by the assuming entity in the same manner as direct business. The assuming entity assumes all of the obligations formerly assumed by the ceding entity. Typically, regulatory and policyholder approval is required. When a company intends to enter into an assumption reinsurance agreement, an indemnity reinsurance agreement may be used for policies not yet covered by the assumption reinsurance agreement.

The ceding entity is responsible for assessing the collectability of reinsurance proceeds, including determining whether the portion that is non-collectable should be written down. Considerations include financial strength and liquidity of the assuming entity, court or arbitration findings, and other market forces.

Since the 2005 version of this standard was adopted, revisions and new model regulations have significantly changed the nature of reinsurance. One example is the Term and Universal Life Insurance Reserve Financing Model Regulation (Model 787). For reinsurance agreements completed after a certain date for level term and universal life with secondary guarantee policies, Model 787 requires that the calculation of reserves be broken into two pieces and that each piece has a specified type of assets to back them.

The first piece is reserves calculated using the Actuarial Method, a method similar to PBR, but not identical (for example, exclusion testing to determine whether to calculate reserves on a deterministic or stochastic basis is not permitted). These reserves are to be backed by primary securities, defined in the model as certain highly rated securities. Any excess in statutorily required reserves over those calculated using the Actuarial Method would be backed by a combination of primary and other securities. These other securities may include any investments acceptable to the company's domiciliary regulator.

Effective on January 1, 2015, the Risk Management and Own Risk and Solvency Assessment Model Act (Model 505) requires that medium and large insurance groups regularly perform an own risk and solvency assessment (ORSA). The ORSA is a detailed examination of the adequacy of a company's risk management and solvency positions under normal and severe stress scenarios. Reinsurance is often used in a company's risk management program.

Under the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank), if a state is accredited by the National Association of Insurance Commissioners (NAIC) or has solvency standards similar to those mandated by the NAIC, reinsurance reserve credit cannot be denied by other states. In other words, if a ceding entity's domestic regulator complies with these requirements, another US jurisdiction cannot deny reinsurance credit. Further, for an insurer that is predominantly an assuming entity and is domiciled in an NAIC-accredited state or in one that has solvency standards similar to those mandated by the NAIC, its sole solvency regulator is its

domiciliary regulator. Further, no other state can require it to produce financial reports other than those required by their domiciliary regulator.

Another aspect of the Dodd–Frank Act is a provision that allows the U.S. to negotiate an agreement (called a covered agreement) with another country or jurisdiction that will impact the provision of reinsurance by companies domiciled in the other jurisdiction. Two such agreements have been negotiated, one with the E.U. and the other with the U.K. A feature of both of these agreements is that no collateral need be posted under certain conditions. This affects the financial report analysis by allowing the ceding entity to reduce the amount of reserves held backing reinsured business, without having to require the counterparty to establish collateral if the reinsurance agreement and the parties to the reinsurance agreement meet the requirements of the covered agreement.

Statutory collateral requirements have also been modified since this standard was last revised. New types of reinsurers have been defined in the regulation, and international agreements have also affected the amount of collateral that must be posted statutorily. Certified reinsurers are non-U.S. entities that are domiciled in a qualified jurisdiction and maintain certain regulatorily mandated conditions. Once certified, depending on the regulatorily assigned rating of the certified reinsurer, the amount of collateral the reinsurer is required to post can be significantly less than the more typical 100 percent requirement on non-certified, non-E.U., non-U.K. reinsurers. An impact of this change is that the ceding entity may have additional counterparty risk due to the lack of 100 percent collateral backing a reinsurance agreement with a non-U.S. entity.

GAAP has experienced numerous changes with respect to reinsurance under ASU 2018-12. Reinsurance assumed is to use the same accounting methodology as direct insurance.

Reinsurance ceded is to use assumptions that are consistent with the assumptions used for direct insurance. While ceded deferred acquisition cost (DAC) is still to be netted against direct DAC, impairment testing is no longer required. Cost of reinsurance is to be amortized over the remaining life of the agreement. There is also a delinking of invested assets, and therefore even when a block of business is 100 percent coinsured, the business will remain on the insurer's books for the life of the business. The standard allows for the reinsurance of market risk in products like guaranteed minimum benefits in variable products, under certain conditions. If those conditions are not met, then ASC 815 (Derivatives and Hedging) dealing with embedded derivatives is invoked.

Since the last revision of ASOP No. 11, much has changed in the health insurance world. The types of products offered and the types of entities assuming risk for these health products have changed, triggering the rise in the use of reinsurance-type coverages in non-traditional ways.

One feature of the Affordable Care Act (ACA) was a temporary transitional reinsurance program that was designed to help stabilize the premiums that insurers charge. Since the federal transitional reinsurance program expired at the end of 2016, several states have established reinsurance programs to stabilize ACA premiums, particularly in the non-group market. These state programs are largely fashioned after commercial specific stop-loss insurance products, with attachment points, caps, and coinsurance parameters set by the state and may be designed to coordinate with any commercial reinsurance purchased by health carriers.

Large commercial companies often provide health insurance to their employees on a “self-insured” basis. In this case, the commercial company assumes the risk for paying claims itself and often purchases stop-loss insurance from a third party to mitigate that risk.

The prevalence of risk-sharing arrangements with health care providers has also increased over the last decade. In response to this trend, the demand for provider excess loss insurance products has increased to help mitigate risk assumed by healthcare providers. Additionally, other risk-bearing entities have emerged to provide value by assuming health insurance risk.

In response to these changes, the ASB decided to revise this standard.

Current Practices

The actuary may perform actuarial services in a variety of areas with respect to reinsurance. The following are some examples of the areas the actuary may deal with regarding reinsurance. Preparation of regulatory reports involves the analysis of an entity’s reinsurance program. This includes preparation of items such as the Actuarial Opinion and Memorandum Report and various aspects of a company’s GAAP statement. An actuary may also be called upon to identify risks assumed by the entity and how to mitigate those risks. Knowing the nature of and how to analyze an entity’s reinsurance program is essential to understanding an entity’s risk profile. An actuary may also be called upon to analyze the experience of reinsurance business assumed or ceded by an entity.

Appendix 2

Comments on the First Exposure Draft and Responses

The first exposure draft of this standard, *Reinsurance Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports*, was issued in November 2019 with a comment deadline of June 30, 2020. Two comment letters were received, both submitted by committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 11 Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The ASB Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 11 Task Force, the ASB Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the first exposure draft.

GENERAL COMMENTS	
Comment	One commentator recommended revising the title of the standard to reflect the fact that more than just reinsurance is covered.
Response	The reviewers agree that the title needs to be broader to align with the broader scope of the standard and changed the title to “Treatment of Reinsurance or Similar Risk Transfer Programs Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports.”
TRANSMITTAL MEMORANDUM	
Question #1: Is the scope description relating to the inclusion of self-insurance clear? If not, what wording would make it clearer?	
Comment	One commentator said the language was generally clear but offered modifications. The comment summary and response have been moved to section 1.2.
Question #2: Is the guidance sufficient given current laws, regulations, and accounting rules? If not, please explain what should be added.	
Comment	One commentator suggested modifications to the definition of nonproportional feature in section 2.10. The comment summary and response have been moved to section 2.10.
Question #3: Are there any areas where the guidance is inconsistent with current practice? If so, please explain or provide examples.	
Comment	One commentator suggested modifications to sections 2.11, sections 3.1(b), 3.2.1(k)(2), 3.2.2(c), 3.2.2, and section 3.7(c). These comments and responses have been moved to those sections.

Question #4: Are there areas where the guidance creates issues with any reinsurance regulatory requirements? If so, please explain or provide examples.	
Comment	One commentator expressed concern that certain reinsurance provisions described in this standard may not comply with A-791. The commentators did not believe that the guidance itself violated any statutory regulation.
Response	The reviewers note that the standard is not limited to statutory accounting and therefore made no change in response to this comment.
Question #5: Are there areas where the guidance creates conflict or introduces ambiguity with reinsurance-related guidance in other ASOPs? If so, please explain or provide examples.	
Comment	One commentator said that the standard should restore language from the prior version that said the actuary should consider relevant applicable laws and regulations or other binding authority affecting reserve credit or accounting for reinsurance.
Response	The reviewers believe that this issue is adequately covered in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , and therefore made no change.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator said that overall responsibility for financial reports generally lies with accountants.
Response	The reviewers note that the scope states that the standard covers “performing actuarial services in connection with financial reports” and therefore made no change in response to this comment.
Comment	One commentator recommended adding stop-loss as an example of third-party insurance in the second sentence of the second paragraph to clarify that stop-loss insurance of self-insured health plans is within scope.
Response	The reviewers agree and made the change.
Comment	One commentator recommended adding references to ASOP No. 5, <i>Incurred Health and Disability Claims</i> , and ASOP No. 42, <i>Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims</i> , as applicable, throughout ASOP No. 11 (e.g., considering the effect of different lag patterns related to the reinsurance disclosures).
Response	The reviewers believe that these and other potentially relevant standards are covered by ASOP No. 1, which states “actuaries are responsible for determining which ASOPs apply to the task at hand” and therefore made no change in response to this comment.
SECTION 2. DEFINITIONS	
2.4, Financial Report (now section 2.6)	
Comment	One commentator said that the definition of “Financial Reports” is too broad and should be limited to the types of statements named in the standard.
Response	The reviewers intentionally set a broad scope in order to have the standard remain useful through the future evolution of best practices and regulations and innovations in risk management/transfer products. The reviewers therefore made no change.
Comment	One commentator asked whether the definition of “Financial Reports” was overly broad and included routine or periodic reports used solely for internal management reporting.
Response	The reviewers note that because a principal relies on an actuary’s work products, the standard applies to all such products. The reviewers therefore made no change.

Section 2.10, Nonproportional Feature (now section 2.12)	
Comment	One commentator said that the definition of nonproportional feature could be interpreted to scope in certain arrangements that would otherwise be considered proportional, such as a coinsurance treaty where there is inuring yearly renewable term (YRT) reinsurance with third-party reinsurers, and suggested clarifying language.
Response	The reviewers agree with the suggested clarifying language and made the change.
Section 2.11, Reinsurance Agreement (now section 2.13)	
Comment	One commentator suggested expanding the definition of Reinsurance Agreement to reflect the expanded scope.
Response	The reviewers agree and added a reference to self-insured benefit plans.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator said that the adjective “material” is used in some sections but not others (for example, section 3.2), may not be used consistently, and should be defined.
Response	In response to this comment, the reviewers deleted “material” from every section except section 4. The reviewers note that “materiality” is discussed in ASOP No. 1. Definitions and discussions included in ASOP No. 1 are intended to apply to all other standards.
Section 3.1(b), (Reinsurance Program Features)	
Comment	One commentator suggested replacing “or” with “and” in the language describing the structure of a reinsurance agreement.
Response	The commentators agree and made the change.
Section 3.2, Financial Reports (now deleted)	
Comment	One commentator suggested deleting section 3.2 because it is unnecessary and renumbering sections 3.2.1 and 3.2.2 sections 3.2 and 3.3, respectively, since the entire standard applies to financial reports.
Response	The reviewers agree and made the suggested change.
Section 3.2.1(a) (Impact of Risks Reinsured) (now section 3.2[a])	
Comment	One commentator asked for a specific reference to ASOP No. 7, <i>Analysis of Life, Health, or Property/Casualty Insurer Cash Flows</i> , when discussing how the terms and condition of the reinsurance program impact the expected cash flows.
Response	The reviewers do not think a reference is necessary and made no change.
Section 3.2.1(j) (Impact of Risks Reinsured) (now section 3.4, Models Used in Preparing Financial Reports)	
Comment	One commentator suggested adding “entries in” after “prepare.”
Response	The reviewers disagree and made no change.
Comment	One commentator suggested adding “take into account the guidance in ASOP No. 56, <i>Modeling</i> ; and” to the end of the section.
Response	The reviewers agree and added a reference to ASOP No. 56.
Comment	One commentator suggested that some of the language included in section 3 may be redundant with ASOP No. 56. The commentator also suggested adding a reference to the assumptions standard.

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Response	The reviewers agree that some of the language was redundant with ASOP No. 56, deleted the redundant language, and added appropriate references to ASOP No. 56. The reviewers note that the assumptions standard has not yet been adopted and therefore a reference is not appropriate at this time.
Section 3.2.1(k) (Impact of Risks Reinsured) (now section 3.4, Models Used in Preparing Financial Reports)	
Comment	One commentator suggested adding references to ASOP No. 52, <i>Principle-Based Reserves for Life Products under the NAIC Valuation Manual</i> , and ASOP No. 56, in section 3.2.1(k)(1).
Response	The reviewers agree that ASOP No. 56 belongs in this section and added a reference. The reviewers do not believe that a reference to ASOP No. 52 is needed.
Comment	One commentator suggested using “models” rather than “model” for consistency and “inconsistent” rather than “different” in section 3.1(k)2.
Response	The reviewers agree with using “model(s)” throughout. The reviewers replaced section 3.2.1(k)(2) with a reference to ASOP No. 56 and moved language on modeling to a new section 3.4.
Comment	One commentator suggested that section 3.2.1(k)(3) should be revised to clarify the intended meaning of “company experience.”
Response	The reviewers added a reference to ASOP No. 56 and moved language on modeling to a new section 3.4.
Comment	One commentator recommended adding a definition of “market estimates.”
Response	The reviewers added a reference to ASOP No. 56 and moved language on modeling to a new section 3.4.
Section 3.2.2, Impact of Risks Retained (now section 3.3)	
Comment	One commentator suggested a specific description related to the PBR example given.
Response	The reviewers believe the example is unnecessary and deleted it.
Comment	One commentator suggested that the standard explicitly require individual assumptions to be reasonable, in addition to all assumptions being reasonable in aggregate.
Response	The reviewers agree and added language stating that the individual assumptions must also be reasonable individually in section 3.2.2(c) (now section 3.3[c]).
Section 3.3, Assessing and Analyzing the Impact of Counterparty Risk (now section 3.5)	
Comment	One commentator suggested that since a counterparty’s rating may change over time, adherence to section 3.3 may prompt more cedants to require collateral on long-duration contracts, which would be expensive.
Response	The reviewers believe that this section appropriately addresses the issue and made no change.

Section 3.4, Assessing and Analyzing the Risks Being Transferred in a Reinsurance Program (now section 3.6)	
Comment	One commentator suggested that this section up to the ERM paragraph seems much too extreme for each and every financial report and should only apply when the actuary is asked to opine on whether the reinsurance program is fulfilling the objectives of the program.
Response	The reviewers disagree. The guidance is focused on “a financial report to assess and analyze the risks being transferred in a reinsurance program” not all financial reports and made no change in response to this comment.
Section 3.5.2 (a), (Treatment of Reinsurance Assumed) (now section 3.7.2[a])	
Comment	One commentator said that the broad statement “or other information exchanged between the parties” raised concerns about credibility and reliance.
Response	The reviewers believe the language is appropriate and made no change.
Section 3.7(c) (Additional Liabilities, Reserves, or Allocation of Capital) (now section 3.9[c])	
Comment	One commentator suggested adding “or level of security” to clarify the reference to Actuarial Guideline 48.
Response	The reviewers agree and made the change.
Section 3.8, Accounting Guidance (now section 3.10)	
Comment	One commentator said that the third and fourth sentences were redundant with section 3.14.
Response	The reviewers agree and removed the sentences.
3.11, Reliance on Assumptions or Methods Set by Another Party (now section 3.13)	
Comment	One commentator suggested adding a reference to ASOP No. 52 in sections 3.11, 3.12, 3.13, and 3.14.
Response	The reviewers believe the language is appropriate and made no change.
Section 3.12, Reliance on Models Developed by Others (now section 3.14)	
Comment	One commentator questioned the requirements relating to the level of understanding the actuary should have about a model they are using to prepare a reinsurance financial report.
Response	The reviewers revised the language to refer to ASOP No. 56, which the ASB adopted after ASOP No. 11 was initially exposed.
Comment	One commentator said that this section appears to have been drawn from ASOP No. 56, suggested deleting duplicative language and adding a reference to ASOP No. 56 instead.
Response	The reviewers agree and revised the language to refer to ASOP No. 56, which the ASB adopted after ASOP No. 11 was initially exposed.
Section 3.14, Reliance on Experts (now section 3.16, Reliance on the Expertise of Others)	
Comment	One commentator said that this section appears to have been drawn from ASOP No. 56, and suggested deleting duplicative language and adding a reference to ASOP No. 56 instead.
Response	The reviewers believe the guidance is not limited to modeling and made no change.

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator said that the disclosure requirements of section 4 create a heavy burden with no resulting value if they are to be applied to routine, periodic reports used solely for internal management reporting.
Response	The reviewers note that because a principal relies on an actuary's work products, the standard applies to all such products. The reviewers therefore made no change.
Comment	One commentator suggested limiting the disclosures to specific instances, practice areas, or report types.
Response	The reviewers note that because a principal relies on an actuary's work products, the standard applies to all such products. The reviewers therefore made no change.
Comment	One commentator suggested clarifying whether section 4.1 should refer to an actuarial report or actuarial communication.
Response	The reviewers believe the guidance is appropriate and made no change.
Comment	One commentator suggested adjusting requirements to reflect the intended user.
Response	The reviewers believe this is covered by ASOP No. 41 and made no change.
Comment	One commentator suggested adding references to ASOP Nos. 5, 42, and 56.
Response	The reviewers added references to ASOP No. 56 and ASOP No. 10, <i>Methods and Assumptions for Use in Life Insurance Company Financial Statements Prepared in Accordance with U.S. GAAP</i> . The reviewers believe that other potentially relevant standards are covered by ASOP No. 1, which states "actuaries are responsible for determining which ASOPs apply to the task at hand."



**Actuarial Standard
of Practice
No. 12**

Risk Classification (for All Practice Areas)

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 12 of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2005**
Updated for Deviation Language Effective May 1, 2011

(Doc. No. 132)

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T A B L E O F C O N T E N T S

Transmittal Memorandum

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December 2005

TO: Members of the American Academy of Actuaries and Other Persons Interested in Risk Classification (for All Practice Areas)

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 12

This booklet contains the final version of a revision of ASOP No. 12, now titled *Risk Classification (for All Practice Areas)*.

Background

In 1989, the Actuarial Standards Board adopted the original ASOP No. 12, then titled *Concerning Risk Classification*. The original ASOP No. 12 was developed as the need for more formal guidance on risk classification increased as the selection process became more complex and more subject to public scrutiny. In light of the evolution in practice since then, as well as the adoption of a new format for standards, the ASB believed it was appropriate to revise this standard in order to reflect current generally accepted actuarial practice.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in September 2004 with a comment deadline of March 15, 2005. Twenty-two comment letters were received and considered in developing the final standard. A summary of the substantive issues contained in the exposure draft comment letters and the responses are provided in appendix 2.

The most significant changes from the exposure draft were as follows:

1. The task force clarified language relating to the interaction of applicable law and this standard.
2. The task force revised the definition of “adverse selection.”
3. The task force reworded the definition of “financial or personal security system” and included examples.
4. The words “equitable” and “fair” were added in section 3.2.1 but defined in a very limited context that is applicable only to rates.

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5. With respect to the operation of the standard, the task force added language that clarifies that this standard in all respects applies only to professional services with respect to designing, reviewing, or changing risk classification systems.
6. Sections 4.1 and 4.2 were combined into a new section 4.1, Communications and Disclosures, which was revised for clarity. The placement of communication requirements throughout the proposed standard was examined, and a sentence regarding disclosure was removed from section 3.3.3 and incorporated into section 4.1. A similar change was made by adding a new sentence in section 4.1 to correspond to the guidance in section 3.4.1.

In addition, the disclosure requirement in section 4 for the actuary to consider providing quantitative analyses was removed and replaced by a new section 3.4.4, which guides the actuary to consider performing such analyses, depending on the purpose, nature, and scope of the assignment.

The task force thanks everyone who took the time to contribute comments on the exposure draft.

The ASB voted in December 2005 to adopt this standard.

Task Force to Revise ASOP No. 12

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ACTUARIAL STANDARD OF PRACTICE NO. 12

RISK CLASSIFICATION (FOR ALL PRACTICE AREAS)

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems.
- 1.2 **Scope**—This standard applies to all actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems used in connection with financial or personal security systems, as defined in section 2.4, regarding the classification of individuals or entities into groups intended to reflect the relative likelihood of expected outcomes. Such professional services may include expert testimony, regulatory activities, legislative activities, or statements concerning public policy, to the extent these activities involve designing, reviewing, or changing a risk classification system used in connection with a specific financial or personal security system.

Throughout this standard, any reference to performing professional services with respect to designing, reviewing, or changing a risk classification system also includes giving advice with respect to that risk classification system.

Risk classification can affect and be affected by many actuarial activities, such as the setting of rates, contributions, reserves, benefits, dividends, or experience refunds; the analysis or projection of quantitative or qualitative experience or results; underwriting actions; and developing assumptions, for example, for pension valuations or optional forms of benefits. This standard applies to actuaries when performing such activities to the extent such activities directly or indirectly involve designing, reviewing, or changing a risk classification system. This standard also applies to actuaries when performing such activities to the extent that such activities directly or indirectly are likely to have a material effect, in the actuary's professional judgment, on the intended purpose or expected outcome of the risk classification system.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the

future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for any professional service commenced on or after May 1, 2006.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Advice**—An actuary’s communication or other work product in oral, written, or electronic form setting forth the actuary’s professional opinion or recommendations concerning work that falls within the scope of this standard.
- 2.2 **Adverse Selection**—Actions taken by one party using risk characteristics or other information known to or suspected by that party that cause a financial disadvantage to the financial or personal security system (*sometimes referred to as antiselection*).
- 2.3 **Credibility**—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).
- 2.4 **Financial or Personal Security System**—A private or governmental entity or program that is intended to mitigate the impact of unfavorable outcomes of contingent events. Examples of financial or personal security systems include auto insurance, homeowners insurance, life insurance, and pension plans, where the mitigation primarily takes the form of financial payments; prepaid health plans and continuing care retirement communities, where the mitigation primarily takes the form of direct service to the individual; and other systems, where the mitigation may be a combination of financial payments and direct services.
- 2.5 **Homogeneity**—The degree to which the expected outcomes within a risk class have comparable value.
- 2.6 **Practical**—Realistic in approach, given the purpose, nature, and scope of the assignment and any constraints, including cost and time considerations.
- 2.7 **Risk(s)**—Individuals or entities covered by financial or personal security systems.
- 2.8 **Risk Characteristics**—Measurable or observable factors or characteristics that are used to assign each risk to one of the risk classes of a risk classification system.
- 2.9 **Risk Class**—A set of risks grouped together under a risk classification system.

- 2.10 **Risk Classification System**—A system used to assign risks to groups based upon the expected cost or benefit of the coverage or services provided.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—This section provides guidance for actuaries when performing professional services with respect to designing, reviewing, or changing a risk classification system. Approaches to risk classification can vary significantly and it is appropriate for the actuary to exercise considerable professional judgment when providing such services, including making appropriate use of statistical tools. Sections 3 and 4 are intended to provide guidance to assist the actuary in exercising professional judgment when applying various acceptable approaches.
- 3.2 **Considerations in the Selection of Risk Characteristics**—Risk characteristics are important structural components of a risk classification system. When selecting which risk characteristics to use in a risk classification system, the actuary should consider the following:

- 3.2.1 **Relationship of Risk Characteristics and Expected Outcomes**—The actuary should select risk characteristics that are related to expected outcomes. A relationship between a risk characteristic and an expected outcome, such as cost, is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic. In demonstrating a relationship, the actuary may use relevant information from any reliable source, including statistical or other mathematical analysis of available data. The actuary may also use clinical experience and expert opinion.

Rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics. In the context of rates, the word *fair* is often used in place of the word *equitable*.

The actuary should consider the interdependence of risk characteristics. To the extent the actuary expects the interdependence to have a material impact on the operation of the risk classification system, the actuary should make appropriate adjustments.

Sometimes it is appropriate for the actuary to make inferences without specific demonstration. For example, it might not be necessary to demonstrate that persons with seriously impaired, uncorrected vision would represent higher risks as operators of motor vehicles.

- 3.2.2 **Causality**—While the actuary should select risk characteristics that are related to expected outcomes, it is not necessary for the actuary to establish a cause and

effect relationship between the risk characteristic and expected outcome in order to use a specific risk characteristic.

- 3.2.3 **Objectivity**—The actuary should select risk characteristics that are capable of being objectively determined. A risk characteristic is objectively determinable if it is based on readily verifiable observable facts that cannot be easily manipulated. For example, a risk classification of “blindness” is not objective, whereas a risk classification of “vision corrected to no better than 20/100” is objective.
- 3.2.4 **Practicality**—The actuary’s selection of a risk characteristic should reflect the tradeoffs between practical and other relevant considerations. Practical considerations that may be relevant include, but are not limited to, the cost, time, and effort needed to evaluate the risk characteristic, the ongoing cost of administration, the acceptability of the usage of the characteristic, and the potential usage of different characteristics that would produce equivalent results.
- 3.2.5 **Applicable Law**—The actuary should consider whether compliance with applicable law creates significant limitations on the choice of risk characteristics.
- 3.2.6 **Industry Practices**—When selecting risk characteristics, the actuary should consider usual and customary risk classification practices for the type of financial or personal security system under consideration.
- 3.2.7 **Business Practices**—When selecting risk characteristics, the actuary should consider limitations created by business practices related to the financial or personal security system as known to the actuary and consider whether such limitations are likely to have a significant impact on the risk classification system.
- 3.3 **Considerations in Establishing Risk Classes**—A risk classification system assigns each risk to a risk class based on the results of measuring or observing its risk characteristics. When establishing risk classes for a financial or personal security system, the actuary should consider and document any known significant choices or judgments made, whether by the actuary or by others, with respect to the following:
- 3.3.1 **Intended Use**—The actuary should select a risk classification system that is appropriate for the intended use. Different sets of risk classes may be appropriate for different purposes. For example, when setting reserves for an insurance coverage, the actuary may choose to subdivide or combine some of the risk classes used as a basis for rates.

3.3.2 Actuarial Considerations—When establishing risk classes, the actuary should consider the following, which are often interrelated:

- a. Adverse Selection—If the variation in expected outcomes within a risk class is too great, adverse selection is likely to occur. To the extent practical, the actuary should establish risk classes such that each has sufficient homogeneity with respect to expected outcomes to satisfy the purpose for which the risk classification system is intended.
- b. Credibility—It is desirable that risk classes in a risk classification system be large enough to allow credible statistical inferences regarding expected outcomes. When the available data are not sufficient for this purpose, the actuary should balance considerations of predictability with considerations of homogeneity. The actuary should use professional judgment in achieving this balance.
- c. Practicality—The actuary should use professional judgment in balancing the potentially conflicting objectives of accuracy and efficiency, as well as in minimizing the potential effects of adverse selection. The cost, time, and effort needed to assign risks to appropriate risk classes will increase with the number of risk classes.

3.3.3 Other Considerations—When establishing risk classes, the actuary should (a) comply with applicable law; (b) consider industry practices for that type of financial or personal security system as known to the actuary; and (c) consider limitations created by business practices of the financial or personal security system as known to the actuary.

3.3.4 Reasonableness of Results—When establishing risk classes, the actuary should consider the reasonableness of the results that proceed from the intended use of the risk classes (for example, the consistency of the patterns of rates, values, or factors among risk classes).

3.4 Testing the Risk Classification System—Upon the establishment of the risk classification system and upon subsequent review, the actuary should, if appropriate, test the long-term viability of the financial or personal security system. When performing such tests subsequent to the establishment of the risk classification system, the actuary should evaluate emerging experience and determine whether there is any significant need for change.

3.4.1 Effect of Adverse Selection—Adverse selection can potentially threaten the long-term viability of a financial or personal security system. The actuary should assess the potential effects of adverse selection that may result or have resulted from the design or implementation of the risk classification system. Whenever the effects of adverse selection are expected to be material, the actuary should, when

practical, estimate the potential impact and recommend appropriate measures to mitigate the impact.

3.4.2 **Risk Classes Used for Testing**—The actuary should consider using a different set of risk classes for testing long-term viability than was used as the basis for determining the assigned values if this is likely to improve the meaningfulness of the tests. For example, if a risk classification system is gender-neutral, the actuary might separate the classes based on gender when performing a test of long-term viability.

3.4.3 **Effect of Changes**—If the risk classification system has changed, or if business or industry practices have changed, the actuary should consider testing the effects of such changes in accordance with the guidance of this standard.

3.4.4 **Quantitative Analyses**—Depending on the purpose, nature, and scope of the assignment, the actuary should consider performing quantitative analyses of the impact of the following to the extent they are generally known and reasonably available to the actuary:

- a. significant limitations due to compliance with applicable law;
- b. significant departures from industry practices;
- c. significant limitations created by business practices of the financial or personal security system;
- d. any changes in the risk classes or the assigned values based upon the actuary’s determination that experience indicates a significant need for a change; and
- e. any expected material effects of adverse selection.

3.5 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.6 **Documentation**—The actuary should document the assumptions and methodologies used in designing, reviewing, or changing a risk classification system in compliance with the requirements of ASOP No. 41, *Actuarial Communications*. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.1.

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Section 4. Communications and Disclosures

- 4.1 **Communications and Disclosures**—When issuing actuarial communications under this standard, the actuary should comply with ASOP Nos. 23 and 41. In addition, the actuarial communications should disclose any known significant impact resulting from the following to the extent they are generally known and reasonably available to the actuary:
- a. significant limitations due to compliance with applicable law;
 - b. significant departures from industry practices;
 - c. significant limitations created by business practices related to the financial or personal security system;
 - d. a determination by the actuary that experience indicates a significant need for change, such as changes in the risk classes or the assigned values; and
 - e. expected material effects of adverse selection;
 - f. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - g. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - h. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

The actuarial communications should also disclose any recommendations developed by the actuary to mitigate the potential impact of adverse selection.

Appendix 1

Background and Current Practices

Note: The following appendix is provided for informational purposes but is not part of the standard of practice.

Background

Risk classification has been a fundamental part of actuarial practice since the beginning of the profession. The financial distress and inequity that can result from ignoring the impact of differences in risk characteristics was dramatically illustrated by the failure of the nineteenth-century assessment societies, where life insurance was provided at rates that disregarded age. Failure to adhere to actuarial principles regarding risk classification for voluntary coverages can result in underutilization of the financial or personal security system by, and thus lack of coverage for, lower risk individuals, and can result in coverage at insufficient rates for higher risk individuals, which threatens the viability of the entire system.

Adverse selection may result from the design of the classification system, or may be the result of externally mandated constraints on risk classification. Classes that are overly broad may produce unexpected changes in the distribution of risk characteristics. For example, if an insurer chooses not to screen for a specific risk characteristic, or a jurisdiction precludes screening for that characteristic, this may result in individuals with the characteristic applying for coverage in greater numbers and/or amounts, leading to increased overall costs.

Risk classification is generally used to treat participants with similar risk characteristics in a consistent manner, to permit economic incentives to operate and thereby encourage widespread availability of coverage, and to protect the soundness of the system.

The following actuarial literature provides additional background and context with respect to risk classification:

1. In 1957, the Society of Actuaries published *Selection of Risks* by Pearce Shepherd and Andrew Webster, which educated several generations of actuaries and is still a useful reference.
2. In 1980, the American Academy of Actuaries published the *Risk Classification Statement of Principles*, which has enjoyed widespread acceptance in the actuarial profession. At the time of this revision of ASOP No. 12, the American Academy of Actuaries was developing a white paper regarding risk classification principles.
3. In 1992, the Committee on Actuarial Principles of the Society of Actuaries published “Principles of Actuarial Science,” which discusses risk classification in the context of the principles on which actuarial science is based.

Current Practices

Over the years, a multitude of risk classification systems have been designed, put into use, and modified as a result of experience. Advances in medical science, economics, and other disciplines, as well as in actuarial science itself, are likely to result in continued evolution of these systems. While future developments cannot be foreseen with accuracy, practicing actuaries can take reasonable steps to keep abreast of emerging and current practices. These practices may vary significantly by area of practice. For example, the risk classes for voluntary life insurance may be subdivided to reflect the applicant's state of health, smoking habits, and occupation, while these factors are usually not considered in pension systems.

Innovations in risk classification systems may engender considerable controversy. The potential use of genetic tests to classify risks for life and health insurance is a current example. In some cases, such controversy results in legislation or regulation. The use of postal codes, for example, has been outlawed for some types of coverage. For the most part, however, the legal test for risk classification has remained unchanged for several decades; risk classification is allowed so long as it is "based on sound actuarial principles" and "related to actual or reasonably anticipated experience."

Risk classification issues in some instances may pose a dilemma for an actuary working in the public policy arena when political considerations support a system that contradicts to some degree practices called for in this ASOP. Also, when designing, reviewing, or changing a risk classification system, actuaries may perform professional services related to a designated set of specific assumptions that place certain restraints on the risk classification system.

In such situations, it is important for those requesting such professional services to have the benefit of professional actuarial advice.

This ASOP is not intended to prevent the actuary from performing professional services in the situations described above. In such situations, the communication and disclosure guidance in section 4.1 will be particularly pertinent, and current section 4.1(e), which requires disclosure of any known significant impact resulting from expected material effects of adverse deviation, may well apply. Section 4.1(a), which relates to applicable law, and section 4.1(b), which relates to industry practices, may also be pertinent.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 12, *Risk Classification for All Practice Areas*, was issued in September 2004 with a comment deadline of March 15, 2005. Twenty-two comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The task force carefully considered all comments received. Summarized below are the significant issues and questions contained in the comment letters and the responses, which may have resulted from ASB, General Committee, or task force discussion. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	Several commentators suggested various editorial changes in addition to those addressed specifically below.
Response	The task force implemented such suggestions if they enhanced clarity and did not alter the intent of the section.
Comment	One commentator noted that the ASOP should deal with the ability of an insured to misrepresent or manipulate its classification.
Response	The task force believed that the considerations raised by the commentator are adequately addressed by sections 3.2.3 and 3.2.4.
Comment	One commentator thought that a section on public and social policy considerations should be added to the standard.
Response	The task force believed that social and public policy considerations, while essential aspects of the way the public views the profession, did not belong in an ASOP dealing with the actuarial aspects of risk classification.
Comment	One commentator questioned whether the ASOP would apply to company selection criteria (tiering criteria) and schedule-rating criteria that may be part of a rating scheme.
Response	The task force believes that the ASOP applies to the extent the selection or schedule rating criteria, used by a company as part of the risk classification system, creates the potential for adverse selection.
Comment	One commentator believed that the ASOP could conflict with proposed state legislation to ban credit as a rating variable and suggested adding an additional consideration in section 3 that the actuary should select risk characteristics in order to avoid controversy or lawsuits.
Response	The task force believes it has addressed issues regarding applicable law, industry practices, business practices, and testing the risk classification system under various scenarios.
Comment	In the transmittal memorandum of the exposure draft, the task force asked whether the key changes from the previous standard were appropriate.
Response	Several commentators responded that the changes were appropriate and some suggested additional changes that are discussed in this appendix.

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Comment	One commentator expressed concern regarding the expansion of scope and the implications in actuarial work that would be otherwise unrelated to risk classification and the expansion of scope to the public policy arena in general.
Response	The task force has added modified wording in the standard to clarify that in all cases the standard applies only in respect to design, reviewing, or changing risk classification systems related to financial or personal security systems.
Comment	Two commentators believed that the revised standard should discuss the purposes of risk classification similar to the discussion in the previous standard. One commentator noted the discussion about encouraging “widespread availability of coverage” in particular.
Response	The task force retained a brief discussion of the purposes of risk classification in appendix 1 but did not believe it was appropriate for the ASOP to provide additional education about the purposes of risk classification. The task force noted that a white paper on risk classification that could contain such material is being developed.
Comment	Several commentators noted that the previous ASOP No. 12 had been very useful in court proceedings and recommended that the task force retain some of the wording in section 5 of the previous ASOP. One commentator suggested strengthening the revised standard so that actuarial testimony would be given greater weight by the courts in interpreting rate standards. Another commentator suggested strengthening the ASOP by adding an explicit statement that one objective during the development and use of risk classification systems is to minimize adverse selection.
Response	The task force reviewed the revised standard with these concerns in mind but concluded that the revised standard represents current generally accepted practice and provides an appropriate level of guidance. The task force considered the specific suggestions with respect to additional wording and incorporated some of the wording regarding adverse selection from the old section 5.5 into appendix 1.
Comment	In the transmittal memorandum of the exposure draft, the task force asked whether it was appropriate for the ASOP not to use the terms “equitable” and “fair.” Two commentators believed that the ASOP should use or define these concepts because they have been used in court proceedings, but the majority of commentators believed that it was appropriate not to define them and that the standard adequately addressed these concepts.
Response	The task force agreed that the ASOP should not define subjective qualities such as “equitable” and “fair.” As the result of ASB deliberation on this issue, language was added to section 3.2.1 to discuss what was meant by the terms “equitable” and “fair.” These terms are intended to apply to a risk classification system only to the extent the risk classification system applies to rates. As such, a formal definition was not added. Court decisions notwithstanding, there is no general agreement as to what characterizes “equitable” classification systems or “fair” discrimination. The task force also considered the possibility that further discussions about such issues might become part of the proposed white paper on risk classification that the American Academy of Actuaries is developing.
Comment	One commentator questioned why the standard offered separate guidance for “risk characteristics” (section 3.2) and “risk classes” (section 3.3). Another commentator believed there should be greater differentiation between the concepts of “risk characteristic” and “risk classification.”
Response	The task force believed that the ASOP uses these terms appropriately and made no change.
Comment	One commentator thought that section 3.3.2 should include guidance on appropriately matching the risk with the outcome when establishing a risk class.
Response	The task force believed that section 3.2.1 addressed this comment and noted that section 3.3.2(a) requires sufficient homogeneity with respect to outcomes.

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Section 1.2, Scope	
Comment	In the transmittal memorandum of the exposure draft, the task force asked whether it was appropriate to include the actuary's advice within the scope of the standard. Several commentators agreed that including guidance on actuarial advice was appropriate. One commentator believed that the disclosure requirements in section 4 could be burdensome to an actuary who has provided brief oral advice.
Response	The task force kept actuarial advice within the scope of the standard and intended that the disclosure requirements in section 4 should apply to any actuarial advice that falls within the scope of the standard.
Comment	One commentator questioned what was meant by "legislative activities" as an example of a professional service.
Response	The task force intended that "legislative activities" could include drafting legislation, for example.
Comment	Several commentators questioned the meaning of "personal security system." One commentator questioned whether the definition of "financial or personal security system" would exclude share-based payment systems from the scope of the standard. The commentator recommended that the standard be revised to include such systems.
Response	The task force intended that the ASOP should apply if share-based payment systems or stock options were part of a financial or personal security system, as defined in the section 2.5. If such plans were not part of a financial or personal security system, the ASOP would not apply. The task force chose not to expand the scope to include such plans in all situations but did clarify the definition of "financial or personal security system."
SECTION 2. DEFINITIONS	
Comment	One commentator suggested that a definition of experience be included, citing the definition of "experience" in the previous ASOP (old section 2.5), which includes the wording, "Experience may include estimates where data are incomplete or insufficient."
Response	The task force agreed that experience may include estimates where data are incomplete or insufficient but did not believe that the old definition was necessary in the revised ASOP.
Comment	One commentator suggested that a definition of "reasonable" be included.
Response	The task force disagreed and did not add a definition of "reasonable."
Section 2.1, Advice	
Comment	One commentator suggested that "other work product" was not needed, since the standard already listed "an actuary's oral, written, or electronic communication."
Response	The task force revised the language to clarify that "communication or other work product" was intended.
Comment	One commentator believed that a definition for "advice" is not needed.
Response	The task force disagreed and retained the definition of advice.
Section 2.2, Adverse Selection	
Comment	In the transmittal memorandum of the exposure draft, the task force asked if the definition of "adverse selection" was appropriate or whether an alternative definition (included in the transmittal letter) would be preferable. Many commentators responded, some agreeing with the original, some with the alternative, and some suggested other wording. The other wording was most often to change the phrase, "take financial advantage of."
Response	The task force believed that some of the reasoning on the part of the commentators who preferred the current version did not accurately describe adverse selection. The task force ultimately decided to use the alternative definition in the standard and believed that it better addressed some commentators' concerns that the other definition could have a negative connotation with respect to motivation.

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Comment	One commentator suggested that “antiselection” is synonymous with adverse selection and that should be made clear in the definition.
Response	The task force agreed and added that reference.
Section 2.4, Credibility (now 2.3)	
Comment	Two commentators believed that within the definition of “credibility” the language concerning “predictive” was confusing.
Response	The task force retained the definition as it is used in several other ASOPs.
Section 2.5, Financial or Personal Security System (now 2.4)	
Comment	Several commentators questioned the meaning of “personal security system.”
Response	The task force clarified the definition.
Comment	One commentator suggested that “impact” be modified to read “financial impact.”
Response	The task force disagreed and revised the definition of “financial and security systems” to delineate the impacts.
Section 2.6, Homogeneity (now 2.5)	
Comment	One commentator believed the definition of “homogeneity” needed revisions to include the concept of grouping similar risks. Another commentator found the definition unclear.
Response	The task force believes that the current definition is appropriate for this ASOP.
Section 2.7, Practical (now 2.6)	
Comment	One commentator believed the definition of “practical” was much too broad and needed to be more actuarial in nature. Alternatively, the commentator suggested dropping it and relying on section 3.2.4.
Response	The task force believed the definition was appropriate and made no change. Section 3.2.4 addresses actuarial practice with respect to practicality. While “practical” is used there and in other places, it is always modified by its context.
Section 2.8, Risk(s) (now 2.7)	
Comment	One commentator suggested that the definition of risks as individuals or entities seemed too limiting and noted that covered risks can also include pieces of property or events.
Response	The task force disagreed, believing that “entity” could encompass property and events.
Comment	One commentator suggested that a unit of risk be defined at the basic unit of risk.
Response	The task force disagreed and made no change.
Section 2.9, Risk Characteristics (now 2.8)	
Comment	One commentator suggested defining risk characteristics as “measurable or observable factors or characteristics, each of which is measured by grouping similar risks into risk classes.”
Response	The task force disagreed and made no change.
Section 2.11, Risk Classification System (now 2.10)	
Comment	One commentator believes the definition of “risk classification system” is circular since “classify” is used in the definition.
Response	The task force agreed and revised the wording.
Comment	One commentator recommended that the term “risks” be changed to “similar risks” in this definition just as in the old definition of risk classification that used the phrase “grouping risks with similar risk characteristics.”
Response	The task force disagreed and made no change.
Comment	One commentator suggested replacing “groups” with “classes.”
Response	The task force disagreed and made no change.

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SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2.1, Relationship of Risk Characteristics and Expected Outcomes	
Comment	One commentator expressed concern with the standard’s differentiation between the section’s quantitative and subjective factors.
Response	The task force did not intend to be prescriptive as to how to quantify the ratings scheme and believed that the ASOP was sufficiently specific. The ASOP does not address rate adequacy. Selection is the focus, not quantification.
Comment	One commentator believed that “clinical” was not an appropriate adjective to describe the experience an actuary is allowed to use.
Response	The task force intentionally used the term “clinical.”
Comment	One commentator believed that if the classification cannot be measured by actual insurance data, then it is not really a risk classification system.
Response	The task force disagreed and made no change.
Comment	One commentator suggested that the three points addressing why risk classification is generally used be moved to background information.
Response	The task force agreed that such educational language was more appropriate in an appendix than in the body of the ASOP and has moved it.
Comment	One commentator believed that it may be difficult to deal with the process and procedures involved with considering the interdependence of risk characteristics and their potential impact on the operation of the risk classification system.
Response	The task force did not change the language to address this comment but notes that section 3.2.4 addresses considerations regarding practicality.
Section 3.2.2, Causality	
Comment	A number of commentators expressed concern with establishing a cause-and-effect relationship while others thought the standard did not go far enough in this regard.
Response	The task force agreed that, where there is a demonstrable cause-and-effect relationship between a risk characteristic and the expected outcome, it is appropriate for the actuary to include such a demonstration. However, the task force recognized that there can be significant relationships between risk characteristics and expected outcomes where a cause-and-effect relationship cannot be demonstrated.
Section 3.2.4, Practicality	
Comment	Two commentators suggested the use of examples of practical considerations.
Response	The task force revised the section to indicate that the language shows examples of practical considerations.
Comment	One commentator suggested that “theoretical,” as used in section 3.2.4, be defined.
Response	The task force replaced “theoretical” with “other relevant.”
Section 3.2.5, Applicable Law	
Comment	One commentator thought that the proposed language in this section was much too broad.
Response	The task force disagreed with the comment and made no change.

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Section 3.3, Considerations in Establishing Risk Classes	
Comment	One commentator expressed concern that the documentation requirements for these considerations represented an increase from the previous version.
Response	The task force thought the documentation requirements were appropriate and necessary and made no change.
Section 3.3.1, Intended Use	
Comment	One commentator noted that stratifying data sets in loss reserving is different from risk classification, which is done to price risks, and believed that loss reserving permits more flexibility. The commentator stated that the definition of a risk classification system does not apply to loss reserving.
Response	The task force agreed with the first concepts but disagreed with the final sentence and therefore made no change.
Section 3.3.2, Actuarial Considerations	
Comment	With respect to section 3.3.2(a), one commentator suggested replacing the word “for” in the first line with “within” for clarification.
Response	The task force agreed and made the suggested change.
Comment	With respect to section 3.3.2(b), two commentators questioned what was intended by the use of the term “large enough.”
Response	The task force believed the language was sufficiently clear and made no change.
Comment	One commentator pointed out that there are often classes that, individually, have associated experience with low statistical credibility and believed that alternatives to credibility should be included in section 3.3.2(b).
Response	While the task force agreed that there are situations in which actuarially sound classification plans will have individual classes where the experience has low statistical credibility, the task force believed that credibility is a desirable characteristic of risk classes within a risk classification system and that no expansion to include alternatives was necessary.
Comment	One commentator suggested replacing “statistical predictions” with “predictions” in section 3.3.2(b) to avoid the implication that underlying statistics were required. Another commentator suggested that the term “predictions” needed explanation.
Response	The task force agreed with these comments and replaced “predictions” with “inferences” and edited the language to improve its clarity.
Comment	One commentator suggested that the last sentence of section 3.3.2(b), while accurate, was irrelevant.
Response	The task force agreed and eliminated the sentence.
Comment	With respect to section 3.3.2(c), one commentator suggested the need for definitions of “accuracy” and “efficiency.”
Response	The task force believed that the existing language regarding the actuary’s professional judgment was sufficient in determining the meaning of “accuracy” and “efficiency” and did not add a definition of either word.

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Comment	Several commentators suggested that section 3.3.2(d) be eliminated. A number of those commentators also pointed out that the language was both inconsistent with current actuarial practice and inappropriate as an implied requirement.
Response	The task force agreed and deleted the section.
Section 3.3.3, Other Considerations	
Comment	Several commentators pointed out that the last sentence of the section was unclear and might inadvertently require a degree of testing and determination that was not intended.
Response	The task force deleted the last sentence of the section. In addition, section 4.1, Communications and Disclosures, was clarified as to what disclosures are appropriate.
Section 3.3.4, Reasonableness of Results	
Comment	One commentator found the parenthetical wording confusing.
Response	The task force believed the examples were appropriate and made no change.
Comment	One commentator found this section ambiguous in the context of establishing risk classes. Another commentator suggested that a cost-based definition of reasonable be added or that the section be deleted entirely.
Response	The task force retained the section but clarified the wording by mentioning the intended use of the risk classes. The task force did not believe additional clarification of “reasonableness” was necessary because reasonableness is a subjective concept that may depend on the actuary’s professional judgment. The task force also notes that the <i>Introduction to the Actuarial Standards of Practice</i> discusses this concept in further detail.
Section 3.4, Testing the Risk Classification System	
Comment	One commentator indicated that it may be preferable to substitute the word “or” for “and” on the second line so that the sentence reads, “Upon establishment of the risk classification system or upon subsequent review. . . ”
Response	The task force did not agree and believed the word “and” was appropriate because testing should be carried out both upon establishment and upon subsequent review.
Comment	One commentator wanted to substitute “continuing” for “long-term” viability in the second line. The commentator believed that the usual issue is the current and near-future viability of a system, not its long-term prognosis. Also, another commentator said that the requirement to “test long-term viability” is new and questioned its meaning.
Response	The task force considered alternative wording but ultimately decided that the existing wording best reflected that the actuary should check the risk classification system for viability both in the short-term and in the long-term.

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Comment	One commentator believed that testing the system is set out as something the actuary should do, if appropriate, rather than as something the actuary should consider. The commentator believed that the paragraph implied a duty to test in some situations, without describing explicitly what those situations would be (i.e., when testing would be “appropriate”). The commentator suspected that the situations described in sections 3.4.1–3.4.3 were the kind of situations that the task force had in mind as situations where long-term testing would be “appropriate.” However, as currently written, the commentator thought that a stronger duty could be implied. The commentator suggested that section 3.4 itself should read, “...the actuary should consider testing the long-term viability of the risk classification system. ...”
Response	The task force believed that the existing wording conveyed the concept that the actuary considers whether testing is appropriate and made no change.

Section 3.5, Reliance on Data Supplied by Others (now Reliance on Data or Other Information Supplied by Others)

Comment	One commentator believed that the provision for reliance on data supplied by others was not needed in this ASOP because ASOP No. 23, <i>Data Quality</i> , addresses this.
Response	This task force agreed and revised the section to refer to ASOP No. 23, using wording consistent with other recently adopted ASOPs and exposure drafts.

SECTION 4. COMMUNICATIONS AND DISLOSURES

Section 4.1, Communications (now Communications and Disclosures)

Comment	One commentator suggested changing the phrase “when issuing actuarial communications under this standard” to “when issuing actuarial communications that include elements of actuarial work within the scope of this standard.”
Response	The task force retained the original language to be consistent with other ASOPs.

Section 4.2, Disclosures (now 4.1, Communications and Disclosures)

Comment	One commentator stated that some of the disclosures, notably section 4.2(a) and 4.2(c) (now 4.1(a) and 4.1(c)), are impractical, since they might require the actuary to begin with the universe and then disclose everything that is not utilized. The commentator suggested replacing these disclosure requirements with a communication that defends the choice of risk classification system and notes in that defense how compliance with applicable law and business practices affected the selection, rather than describing all the alternatives that would have been available in the absence of such constraints.
Response	The task force did not agree that the requirement to disclose significant limitations required a discussion of all alternatives that would have been available in the absence of legal or business constraints. The task force noted that the listed disclosures proceed from considerations required in section 3 and modified the wording of the disclosure requirements to be more consistent with that section, including revising the lead-in sentence to require disclosure of the significant impact of such considerations.
Comment	One commentator stated that the disclosure issue is heightened by the expansion of scope into the public policy arena and stated that excessive disclosure requirements may weaken the actuary’s ability to influence the discussion of public policy.
Response	The task force disagreed with the comment and noted that, while the scope of the standard now includes regulatory activities, legislative activities, and statements regarding public policy, the scope does so only in the context of the performance of professional services.

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Comment	One commentator suggested deleting section 4.2(a) (now 4.1(a)), which requires disclosure of significant limitations due to compliance with applicable law, noting that other ASOPs have tended not to include this requirement except where the limitations seriously distort the work product.
Response	The task force disagreed with this comment, noting that significant limitations on the choice of risk characteristics are likely to distort the risk classification system and therefore should be disclosed.
Comment	Several commentators expressed opinions regarding the requirement that the actuary should disclose whether quantitative analyses were performed relative to items being disclosed. One commentator expressed strong objection to this requirement, asserting that the requirement would be counter-productive and would reduce the number of quantitative analyses being done. Another commentator agreed and noted that the disclosure issue was heightened by the expansion of scope to the public policy arena, where an advocacy position may be taken. A third commentator objected to the requirement to disclose that quantitative analyses were <i>not</i> done but suggested requiring that any analyses that were done be summarized. A fourth commentator suggested exempting certain of the required disclosures from the requirement to consider quantification. A fifth commentator pointed out that, while the actuary was required to disclose whether quantitative analyses were performed, the actuary was only required to consider providing the results of those analyses in the disclosure.
Response	The disclosure requirement for the actuary to consider providing quantitative analyses of the impact of the items being disclosed was removed, and instead similar wording was added as a new section 3.4.4, Quantitative Analyses, which guides the actuary to consider performing such analyses, depending on the purpose, nature, and scope of the assignment.
Comment	In the transmittal letter for the exposure draft in request for comment #6, the task force asked whether there were any situations in which the requirement in section 4.2(c) (now 4.1(c)) to disclose any significant limitations created by business practices of the financial or personal security system would not be appropriate. Two comments were received, both agreeing with the appropriateness of the requirement.
Response	The task force retained the requirement.
Comment	Two commentators suggested substituting “indicates” for “creates” in section 4.2(d) (now 4.1(d)).
Response	The task force agreed, changed the wording as suggested, and made other revisions for clarity.
Comment	In the transmittal letter for the exposure draft in request for comment #7, the task force asked whether the requirement in 4.2(e) (now 4.1(e)) to disclose the effects of adverse selection was appropriate. Three commentators addressed this request for comment, and all agreed the requirement was appropriate. However, one commentator suggested that there be no requirement to quantify the impact.
Response	The task force retained the requirement in what is now 4.1(e) and also removed the requirement to consider providing quantitative analyses. Additionally, the task force deleted section 4.2(f) after determining that it was already covered by ASOP No. 41, Actuarial Communications, to which section 4.1 refers.

APPENDIX (now Appendix 1)

Comment	One commentator expressed concern with the citing of the textbook <i>Selection of Risks</i> by Shepherd and Webster.
Response	The task force believed that citing the Shepherd and Webster book was appropriate but added a new lead-in sentence to the citation to indicate that the references cited provide additional background and context with respect to risk classification.



**Actuarial Standard
of Practice
No. 13**

**Trending Procedures in
Property/Casualty Insurance**

Revised Edition

**Developed by the
Subcommittee on Ratemaking of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2009**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 133)

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ASOP No. 13—June 2009

June 2009

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board and Other Persons Interested in Trending Procedures in Property/Casualty Insurance

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 13

This document contains the final version of the revision of ASOP No. 13, *Trending Procedures in Property/Casualty Insurance*.

Background

The existing ASOP No. 13, *Trending Procedures in Property/Casualty Insurance Ratemaking*, was developed by the Subcommittee on Ratemaking of the Casualty Committee in July 1989 and adopted by the ASB in July 1990. Since the promulgation of the original standard, developments in trending procedures have continued, and the use of trending in non ratemaking areas has become more widespread. The Subcommittee prepared this revision of ASOP No. 13 to reflect appropriate actuarial practice with respect to trending procedures in property/casualty insurance and to be consistent with the current ASOP format. Further, this proposed revision expands guidance on the application of trend procedures beyond ratemaking to include reserving, valuations, underwriting, and marketing analyses.

Exposure Draft

The exposure draft of this revision was issued in January 2008 with a comment deadline of May 1, 2008. The Subcommittee on Ratemaking carefully considered the thirteen comment letters received and made changes to the language in several sections in response. For a summary of the substantive issues contained in the exposure draft comment letters and the responses, please see appendix 2.

The most significant changes from the exposure draft were as follows:

1. Section 1.2, Scope and section 2.6, Trending Procedure, were revised to indicate that, for the purpose of this standard, trending does not encompass the process commonly referred to as “development.”
2. Section 4.1, Actuarial Communication, and section 4.2, Additional Disclosures, have been revised to indicate that the actuary needs to make specific disclosures when certain aspects of the trend procedure have a material effect on the result or conclusions of the actuary’s overall analysis.

The ASB voted in June 2009 to adopt this standard.

ASOP No. 13—June 2009

Subcommittee on Ratemaking

Beth Fitzgerald, Chairperson
Gregory L. Hayward Jonathan White
Marc B. Pearl

Casualty Committee of the ASB

Patrick B. Woods, Chairperson
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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 13

**TRENDING PROCEDURES IN
PROPERTY/CASUALTY INSURANCE**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services using trending procedures to estimate future values.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services to estimate future values using trending procedures for all property/casualty coverages. This includes work performed for insurance or reinsurance companies, and other property/casualty risk financing systems that provide similar coverage, such as self insurance.

For purposes of this standard, a trending procedure does not encompass the process commonly referred to as “development,” which estimates changes over time in losses (or other items) within a given exposure period (for example, accident year or underwriting year).
If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed on or after November 1, 2009.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Coverage**—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.
- 2.2 **Experience Period**—The period of time to which historical data used for actuarial analysis pertain.
- 2.3 **Forecast Period**—The future time period to which the historical data are projected.
- 2.4 **Social Influences**—The impact on insurance costs of societal changes such as changes in claim consciousness, court practices, and legal precedents, as well as in other noneconomic factors.
- 2.5 **Trending Period**—The time over which trend is applied in projecting from the experience period to the forecast period.
- 2.6 **Trending Procedure**—A process by which the actuary evaluates how changes over time affect items such as claim costs, claim frequencies, expenses, exposures, premiums, retention rates, marketing/solicitation response rates, and economic indices. Trending procedures estimate future values by analyzing changes between exposure periods (for example, accident years or underwriting years). A trending procedure does not encompass the process commonly referred to as “development,” which estimates changes over time in losses (or other items) within a given exposure period.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Purpose or Use of Trending Procedures**—Trending is an important component in many analyses performed by actuaries including, but not limited to, ratemaking, reserving, valuations, underwriting, and marketing. The actuary should identify the intended purpose or use of the trending procedure. The actuary should apply trending procedures that are appropriate for the applicable purpose or use.

Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes or uses and should consider adjustments to accommodate the multiple purposes or uses to the extent that, in the actuary’s professional judgment, it is appropriate and practical to make such adjustments.

The actuary may present the trend estimate resulting from the trending procedure in a variety of ways, such as a point estimate, a range of estimates, a point estimate with a margin for adverse deviation, or a probability distribution of the trend estimate. The

actuary should consider the intended purpose or use of the trend estimate when deciding how to present the trend estimate.

3.2 **Historical Insurance and Non-Insurance Data**—The actuary should select data appropriate for the trends being analyzed. The data can consist of historical insurance or non-insurance information. When selecting data, the actuary should consider the following:

- a. the credibility assigned to the data by the actuary;
- b. the time period for which the data is available;
- c. the relationship to the items being trended; and
- d. the effect of known biases or distortions on the data relied upon (for example, the impact of catastrophic influences, seasonality, coverage changes, nonrecurring events, claim practices, and distributional changes in deductibles, types of risks, and policy limits).

3.3 **Economic and Social Influences**—The actuary should consider economic and social influences that can have a significant impact on trends in selecting the appropriate data to review, the trending calculation, and the trending procedure. In addition, the actuary should consider the timing of the various influences.

3.4 **Selection of Trending Procedures**—The actuary should select trending procedures after appropriate consideration of available data. In selecting these procedures, the actuary may consider relevant information such as the following:

- a. procedures established by precedent or common usage in the actuarial profession;
- b. procedures used in previous analyses;
- c. procedures that predict insurance trends based on insurance, econometric, and other non-insurance data; and
- d. the context in which the trend estimate is used in the overall analysis.

3.5 **Criteria for Determining Trending Period**—The actuary should consider both the lengths of the experience and forecast periods, and changes in the mix of data between the experience and forecast periods when determining the trending period. When incorporating non-insurance data in the trending procedure, the actuary should consider the timing relationships among the non-insurance data, historical insurance data, and the future values being estimated.

3.6 **Evaluation of Trending Procedures**—The actuary should evaluate the results produced by each selected trending procedure for reasonableness and revise the procedure where appropriate.

- 3.7 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.8 **Documentation**—The actuary should prepare and retain appropriate documentation regarding the methods, assumptions, procedures, and the sources of the data used. The documentation should be in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work, and should be sufficient to comply with the disclosure requirements in section 4.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should refer to ASOP Nos. 23 and 41, *Actuarial Communications*. In addition, the actuary should disclose the following, as applicable, in an actuarial communication:
- a. the intended purpose(s) or use(s) of the trending procedure, including adjustments that the actuary considered appropriate in order to produce a single work product for multiple purposes or uses, if any, as described in section 3.1;
 - b. significant adjustments to the data or assumptions in the trend procedure, that may have a material impact on the result or conclusions of the actuary’s overall analysis;
 - c. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - d. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - e. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.2 **Additional Disclosures**—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:
- a. When the actuary specifies a range of trend estimates, the actuary should disclose the basis of the range provided.
 - b. The actuary should disclose changes to assumptions, procedures, methods or models that the actuary believes might materially affect the actuary’s results or conclusions as compared to those used in a prior analysis, if any, performed for the same purpose.

Appendix 1

Background and Current Practices

Background

Recognition of the significance of trend in many property/casualty analyses and difficulty of discerning turning points has led to a need for increasingly sophisticated trending procedures. Publications of the CAS such as *Variance* and the *Syllabus of Examinations*, and many other publications such as statistics and economics textbooks, provide extensive information on alternative procedures. The actuary may refer to these or develop other procedures, as appropriate for each situation.

Current Practices

Trending procedures are used in ratemaking, reserving, valuation, underwriting, and marketing for most property/casualty insurance plans or policies. In such procedures, actuaries generally place reliance on (1) data generated by the book of business being analyzed, (2) other insurance data, and (3) non-insurance data, in that order of preference. Mathematical techniques are often used to smooth and extrapolate from historical data. In the absence of strong contrary indications, there is a reliance on extrapolations of historical insurance data. Procedures based on non-insurance data are also used. In trending procedures, judgmental considerations generally include, but are not limited to, the historical data used, the success of these techniques in making prior projections, the statistical goodness of fit of the techniques to the historical data, and the impact of any sudden, nonrecurring changes (for example, tort reform) which had not yet been incorporated in the historical data.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *Trending Procedures in Property/Casualty Insurance*, was issued in January 2008 with a comment deadline of May 1, 2008. Thirteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Subcommittee on Ratemaking carefully considered all comments received, and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator stated that the concept of trending is applicable to all actuaries and any ASOP that's created should serve as a single source of professional guidance. The commentator therefore suggested the ASOP title be changed to “Trending Procedures” and that the document be reviewed to make sure it covers all actuarial practice areas (rather than develop separate ASOPs for each area).
Response	The reviewers believe the uses of “trend” can vary among practice areas and that this ASOP is specific to situations that impact property/casualty insurance. The approach taken in other areas has been to incorporate trending as needed in task specific ASOPs.
Comment	Several commentators expressed concern that this standard unintentionally covered reserving practices already subject to ASOP No. 43, <i>Property/Casualty Unpaid Claim Estimates</i> . The concern was the inclusion of reserving practices commonly known as “loss development.”
Response	The reviewers agreed that there was a need to carve out “loss development.” However, the reviewers wanted to ensure that other uses of trend in a reserving context (examples include Cape Cod, Bornhuetter Ferguson, and frequency/severity methods) were included in this standard. The reviewers added language to section 1.2, Scope and section 2.6, Trending Procedure to achieve the goal of carving out “development,” but not the other uses of trend in reserving. In other words, changes between exposure periods are included under this standard but not changes within an exposure period. The term “development” is used rather than “loss development” to recognize that development triangles are also applied to premiums and other components.

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Comment	One commentator stated there are many individual assumptions in actuarial work—the most obvious example being loss development factors—that are not the subject of a separate standard. The commentator also stated he didn't feel “trend” was important enough to warrant its own standard and that consideration should be given to greatly broadening the standard (or combining it with another one) to create one standard encompassing all, for example, “Selection of Actuarial Assumptions in Estimation of Ultimate Losses for Casualty Projections.”
Response	The reviewers believe that trend is important enough to warrant its own standard, and note that ASOP Nos. 12, 25, 29, 30, 38, and 39, in addition to 13, address many different aspects of ratemaking.
Comment	Several commentators requested specific guidance on the many problems facing actuaries when trending, such as selecting regression models, extrapolation, statistical methods, etc.
Response	The reviewers believe it is not the purpose of the standard to provide specific procedures and that it is too difficult to keep a standard up to date with specific procedures.

SECTION 2. DEFINITIONS

Section 2.2, Experience Period

Comment	One commentator suggested changing “to” to “from” and “pertain” to “was obtained” in the definition stating he sees the experience period as being the source of data for the forecast period.
Response	The reviewers believe revising the language would make it less clear and did not make the change.

Section 2.5, Trending Period

Comment	One commentator suggested that ASOP No. 13 give a more fundamental definition of the trending period and that the description of the simple calculation of the trending period be moved to section 3.5, Criteria for Determining Trending Period. In addition, the commentator suggested the definition of “trending period” be rewritten to, “the time over which trend is applied in projecting from the experience period to the forecast period.”
Response	The reviewers modified the definition to reflect the suggested language, but did not agree with the suggestion to move the simple calculation to section 3.5 Criteria for Determining Trending Period.

Section 2.6, Trending Procedure

Comment	One commentator stated that in the definition of “trending procedures,” reference is made to “response rates” and “conversion/issue rates,” and suggested that these terms be separately defined as they have meaning that may not be readily apparent.
Response	The reviewers agreed that these terms may have meaning that is not readily apparent and removed them from the definition as they were meant to be illustrative of items that might be the subject of trend analysis. These examples were replaced by the example of marketing/solicitation response rates.
Comment	One commentator suggested modifying the definition to “a process by which the actuary evaluates how changes over time may affect items such as....”
Response	The reviewers disagreed with adding the word “may” and left the definition unchanged.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Purpose or Use of Trending Procedures	
Comment	One commentator stated that mention should be made (for example, in section 3.4, Selection of Trending Procedures) of specific situations that may require stochastic trending procedures or, at the very least, consideration of multiple scenarios. In addition, the commentator stated it would not be wise to evaluate reinvestment risk based on a single projection of future interest rates noting that interest rates are an economic index for purposes of section 2.6, Trending Procedures, and thus projection of future interest rates would be subject to this standard. If such was not intended, then the phrase “economic index” should be clarified so as to restrict its meaning.
Response	The reviewers added a new paragraph in section 3.1 to recognize that a range or probability distribution of trend estimates may be appropriate.
Comment	One commentator was concerned whether a marketing analysis conducted by an actuary is truly an actuarial work product.
Response	The reviewers believe if an actuary is applying trending methodologies to marketing, then the standard should apply. This is one of the reasons the standard is being expanded beyond ratemaking.
Section 3.2, Historical Insurance and Non-Insurance Data	
Comment	One commentator believed it would be appropriate to add language such as, “In situations where non-insurance data is being used, the actuary should determine and document the causal relationship between the non-insurance data being used and the event or value being forecasted” to clarify this section.
Response	The reviewers disagreed and did not change the language because establishing a causal relationship is not a requirement for use of non-insurance data.
Comment	One commentator suggested modifying this section to read, “The actuary should select available data appropriate for the trends being analyzed. The data can consist of historical insurance or non-insurance information. Considerations should include....”
Response	The reviewers did not add the word “available” to the language but did remove the word “other” per the commentator’s suggestion.
Comment	One commentator suggested that the proposed revised ASOP suffers from the complete absence of any mention of “operational influences,” stating that trends in observed values as a result of operational changes are very common in marketing and reserving, for example, and suggested language to its effect be added.
Response	The reviewers considered operational influences, as reflected in the examples given in this section 3.2 and added “claim practices.”
Comment	One commentator stated that section 3.2(c) was unclear in stating what actuaries are expected to consider. The commentator also stated that he didn’t see how the difference between “explanatory value” and “predictive value” of the data might lead to any change in trending procedure and recommended either removing this section or else providing additional clarification as to its intent.
Response	The reviewers modified the language in section 3.2(c) to clarify the intent.

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Comment	One commentator suggested including a section 3.2(e), which would state the following: e. the data that is used for trending and the data that it is being applied to.
Response	The reviewers did not add a 3.2 (e) but modified the existing 3.2 (c) to read as follows: c. relationship with items being trended; and
Comment	One commentator stated that the first paragraph of this section uses the adjective “historical” to modify “insurance and non-insurance data,” which can be interpreted as implicitly prohibiting procedures that blend historic data with projections acquired from external parties and recommend that “historical” be removed.
Response	The reviewers did not agree and therefore did not modify the language.
Section 3.3, Economic and Social Influences	
Comment	One commentator stated that the sentence, “It is inappropriate to analyze only those factors that have an impact on trend in one direction,” be revised to read, “It is inappropriate to consider for analysis only those factors that have an impact on trend in one direction,” stating that certain factors do not lend themselves to rigorous analysis, and the remaining factors could potentially impact the trend only in one direction.
Response	The reviewers agreed and deleted the sentence instead.
Comment	One commentator believed the comment about “avoidance of bias” is oddly placed and believes if such a comment is needed, it should be promoted to a more prominent, generally applicable place so as to indicate that biases should be avoided wherever they are found, not just in the consideration of economic factors.
Response	The reviewers agreed, believing that this is a very broad consideration, which is covered elsewhere such as by aspects of the Code of Professional Conduct, and thus deleted the sentence.
Section 3.7, Reliance on Data or Other Information Supplied by Others	
Comment	One commentator questioned whether sections 3.7, <i>Reliance on Data or Other Information Supplied by Others</i> ; 3.8, <i>Documentation</i> ; 4.1, <i>Actuarial Communication</i> ; and 4.2, <i>Additional Disclosures</i> provided sufficient guidance.
Response	The reviewers believe these sections provide sufficient guidance and made no modifications.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator believed generic commentary about disclosures, communication, appropriateness, judgment, etc. is not unique to trending, and with rewording could be applied to just about any important actuarial assumption. The commentator stated this implies that the standard could be broadened to encompass a variety of assumptions or that these generic guidances could be restricted to a generic ASOP such as ASOP Nos. 23 and 41 (eliminating the need to repeat them in this section).
Response	The reviewers did not believe that there was any redundancy in that the introduction of this section is reinforcing that the actuary in making an actuarial communication should first and foremost be guided by ASOP Nos. 23 and 41. The additional material that follows in this section is guidance that is particularly relevant when offering an actuarial communication relating to trending procedures.

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Comment	One commentator felt that the guidance in section 4.1 was insufficient, stating that reference to ASOP No. 41, <i>Actuarial Communications</i> , is an inadequate substitute for the professional expectations established in ASOP No. 9, <i>Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations</i> .
Response	The ASB has determined that ASOP No. 9 will be repealed when a revised ASOP No. 41 is adopted. The reviewers believe that all relevant guidance that was included in ASOP No. 9 is to be covered in the revised ASOP No. 41.
Comment	One commentator believed section 4.1(b) placed an undue burden on the actuary stating the actuary is required not only to assess whether or not there were significant limitations in the data, but also to speculate on what a more in-depth analysis (using data that, presumably, isn't available) might produce.
Response	The reviewers agreed and modified the language in section 4.1(b) to address the commentator's concern.
Comment	One commentator believed the current wording in section 4.1(c) could potentially require documentation of risks and uncertainties that are not likely to result in a large deviation from the trend estimate and recommended that this paragraph be revised to read as follows: "specific significant risks and uncertainties that might cause the actual trend to vary materially from the trend estimate, if any."
Response	The reviewers deleted section 4.1(c) because the language was overly broad, and the requirement to disclose all significant assumptions provided the user of the analysis a sufficient basis to evaluate the actuary's work.
Comment	One commentator suggested because ASOP No. 23, <i>Data Quality</i> , and ASOP No. 41, are referenced in the first sentence of this section, that sections 4.1(b) and 4.1(c) are not necessary, stating that section 4.1, particularly subsection (g), of ASOP No. 23 adequately addresses this guidance and in a way that is more understandable.
Response	The reviewers deleted 4.1(c) and revised 4.1(b).
Section 4.2, Additional Disclosures	
Comment	One commentator felt the guidance in section 4.2 was insufficient while another commentator recommended section 4.2(b) be revised to state, "The actuary should disclose changes to assumptions, procedures, methods or models that the actuary believes might materially affect the latest trend estimate from any prior estimates. The actuary should also retain documentation concerning the potential magnitude of the impact of those material changes if those impacts can be reasonably determined." The commentator believed this modification would help limit varying interpretations of the term "update" in the section's lead-in sentence.
Response	The reviewers agreed and modified the language.
Comment	One commentator recommended that section 4.2(b) be removed from the standard stating that the trigger language seems unclear, particularly the meaning of "update of the previous estimate." The commentator also believed this paragraph to be superfluous since the requirement to document assumptions, procedures, methods or models, or changes to such, already exists.
Response	The reviewers revised the language in section 4.2(b) in response to another comment and believe the revision has addressed these concerns.

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APPENDIX	
Comment	One commentator suggested changing “property casualty” to “property/casualty” to be consistent with other references to the practice area.
Response	The reviewers agreed and made the change.
Comment	One commentator suggested changing “Proceedings” to “Variance” in the Background section to make it a more generalized term.
Response	The reviewers agreed and made the change.

**REPEAL OF
ACTUARIAL STANDARD
OF PRACTICE
NO. 14**

**WHEN TO DO CASH FLOW TESTING
FOR LIFE AND HEALTH
INSURANCE COMPANIES**

**Developed by the
Life Committee of the
Actuarial Standards Board**

**Repealed by the
Actuarial Standards Board
September 2001**

Doc. No. 082

September 2001

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Cash Flow Testing for Life and Health Insurance Companies

FROM: Actuarial Standards Board (ASB)

SUBJ: Repeal of Actuarial Standard of Practice (ASOP) No. 14

This booklet notes the repeal of ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*.

Background

To guide actuaries who needed to perform cash flow testing, the Actuarial Standards Board adopted ASOP No. 7, then titled *Performing Cash Flow Testing for Insurers*, in October 1988 (revised July 1991 and September 2001). In addition, in July 1990 the ASB adopted ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, to provide guidance in determining whether or not to do cash flow testing in forming a professional opinion or recommendation.

As part of the project to look at all cash flow testing standards of practice, a task force of the ASB's Life Committee reviewed ASOP No. 7 (titled, as of September 2001, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*), ASOP No. 14 (*When to do Cash Flow Testing for Life and Health Insurance Companies*), and ASOP No. 22 (titled, as of September 2001, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*). Relevant portions of ASOP No. 14 were incorporated within the 2001 revisions of ASOP No. 7 and ASOP No. 22.

At its September 2001 meeting, the ASB voted to adopt the revised ASOP No. 7 and ASOP No. 22 and to repeal ASOP No. 14.

ASOP No. 14 is repealed for any work performed on or after April 15, 2002.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 15**

**Dividends for Individual Participating
Life Insurance, Annuities, and Disability Insurance**

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 15 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2006
Updated for Deviation Language Effective May 1, 2011**

(Doc. No. 134)

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ASOP No. 15—March 2006

March 2006

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 15

This booklet contains the final version of the revision of ASOP No. 15, now titled *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*.

Background

The ASB adopted the original ASOP No. 15, *Dividend Determination for Participating Individual Life Insurance Policies and Annuity Contracts*, in 1990 and revised it in 1997 to exclude dividend illustrations that are subject to or represented as being in accordance with the National Association of Insurance Commissioners' *Life Insurance Illustrations Model Regulation*.

This current revision of ASOP No. 15, now titled *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*, was prepared by the Task Force to Revise ASOP No. 15 of the Life Committee of the ASB to be consistent with the current ASOP format, to bring individual disability insurance into its scope, and to reflect current, generally accepted actuarial practices with respect to dividends for participating individual life insurance policies and annuity contracts.

Exposure Draft

The exposure draft of this ASOP was issued in March 2005 with a comment deadline of September 30, 2005. Fourteen comment letters, showing thoughtful insight of the issues, were received and considered in developing the final ASOP. For a summary of the substantive issues contained in the exposure draft comment letter and the responses, please see appendix 2.

The most significant changes since the exposure draft were as follows:

1. References to professional services with respect to long-term care insurance were removed from section 1.2, Scope. References to long-term care were also removed from the title and other areas of the standard.
2. Several definitions were modified for improved clarity and consistency.

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3. A sentence was added to section 3.1, Contribution Principle, to clarify that the contribution principle can be applied annually or over an extended period of time.
4. Section 3.3.4, Dividend Factors for New Policies, was changed with respect to setting a dividend factor that differentiates between old and new policies, dropping the reference to setting such a factor on a conservative basis.
5. Guidance with respect to reinsurance was added in new section 3.9, Reinsurance.
6. The discussion of the impact of policy loans was moved from section 3.6, Investment Income, to new section 3.7, Policy Loans.
7. Current practice with respect to disability income insurance in appendix 1 was clarified.

The Life Committee thanks all those who commented on the exposure draft.

The ASB voted in March 2006 to adopt this standard.

Task Force to Revise ASOP No. 15

Thomas A. Phillips, Chairperson Armand M. dePalo Phillip J. Grigg Dale S. Hagstrom	Gary N. Peterson Stephen N. Steinig
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Life Committee of the ASB

Robert G. Meilander, Chairperson Charles Carroll Michael A. Cioffi Dale S. Hagstrom	Thomas A. Phillips Allan W. Ryan Barry L. Shemin
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Actuarial Standards Board

Cecil D. Bykerk, Chairperson William C. Cutlip Alan D. Ford Robert S. Miccolis Lew H. Nathan	Godfrey Perrott William A. Reimert Lawrence J. Sher Karen F. Terry
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ACTUARIAL STANDARD OF PRACTICE NO. 15

**DIVIDENDS FOR INDIVIDUAL PARTICIPATING
LIFE INSURANCE, ANNUITIES, AND DISABILITY INSURANCE**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to the dividend framework and the determination and illustration of dividends for individual participating life insurance, annuities, and disability insurance, whether issued by a stock, fraternal, or mutual insurer.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services in connection with the establishment or modification of the dividend framework and the determination and illustration of dividends for individual participating life insurance, annuities, and disability insurance, including any attached participating riders and agreements.

This standard does not apply to actuaries when performing professional services with respect to illustrations of dividends subject to ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

This standard does not apply to the establishment of the aggregate amount available to be distributed to policyholders as dividends (i.e., divisible surplus).

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed on or after August 1, 2006.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actual Experience**—Historical results within a dividend factor class and trends in those results.
- 2.2 **Contribution Principle**—The concept that aggregate divisible surplus is allocated to policies to reflect the proportion that the policies, as part of their dividend factor classes, are considered to have contributed to divisible surplus.
- 2.3 **Dividend Determination**—Given the dividend framework, the process by which the divisible surplus is allocated to policies including the determination of dividend factors.
- 2.4 **Dividend Factor**—A value or set of values, other than the policy factors, used in the determination of the dividend on a particular policy. A dividend factor reflects the experience of the dividend factor class of policies to which the particular policy belongs. Examples of dividend factors include those related to mortality, morbidity, expense, investment income, policy termination, tax, and experience premiums.
- 2.5 **Dividend Factor Class**—A group of policies for which dividends are determined by using the same value or set of values for a particular dividend factor.
- 2.6 **Dividend Framework**—The structure by which the insurer allocates divisible surplus among participating policies. This includes the assignment of policies to dividend factor classes, the method of allocating income and costs, and the structure of the formulas or other methods of using dividend factors.
- 2.7 **Divisible Surplus**—The aggregate amount available to be distributed to policyholders as dividends.
- 2.8 **Policies**—Individual participating policies and contracts for life insurance, disability insurance and annuities, and group certificates for these same types of business that operate in substantially the same manner as individual participating policies and contracts.
- 2.9 **Policy Factors**—Financial components of a policy based on the guarantees or actuarial components underlying the policy. Examples of policy factors include cash values, reserves and their associated net premiums, gross premiums, policy loan interest rates, and the rates of interest, mortality, and morbidity used in calculating cash values or reserves.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Contribution Principle**—The actuary should use the contribution principle in determining dividends unless, in the actuary’s professional judgment, a different basis is preferable, reasonable, and appropriate. The actuary may apply the contribution principle annually or over an extended period of time. Limitations of the dividend determination process require that practical considerations be reflected in applying the contribution principle, and the actuary may recognize such considerations in applying the contribution principle. The actuary may use approximations, simplified processes, or other adjustments considering relevant conditions and circumstances such as the size of a particular group of policies, the costs and practical difficulties of making a dividend scale change, and the effect of the scale change on individual dividends.
- 3.2 **Dividend Framework**—When advising the insurer with respect to the dividend framework, the actuary should consider the following: (a) treatment of policies within the line of business that, in the actuary’s professional judgment, is equitable; (b) the insurer’s marketing, financial, and other objectives; (c) materiality; (d) relevant policy provisions; and (e) practical limitations.
- 3.3 **Dividend Factors**—The actuary should determine dividend factors that allocate the divisible surplus within the insurer’s dividend framework. The actuary should develop dividend factors based on an analysis of policy factors and actual experience of the participating block for which dividends are being determined. However, when actual experience is not determinable, available, or credible, the actuary should consider the experience and trends in experience of similar classes of business either from the same insurer, from industry sources, or from other non-industry sources, in that order of preference. Dividend factors may differ from actual experience, as the actuary may adjust the factors to reflect the insurer’s financial objectives, to reflect practical limitations, and to result in an estimated aggregate dividend payout equal to divisible surplus.

The actuary should consider materiality and practical limitations in determining the policy and dividend factors that are to appear in the dividend formula or other method of using dividend factors. Thus, the analysis underlying dividend determination may involve the use a variety of policy factors and actual experience measures, but the actuary need not include all of these factors.

When developing new dividend factors for all policies is not practical, the actuary may recommend the continuation of a dividend scale, continuation of certain dividend factors, or the use of approximations or simplified processes or formulas.

- 3.3.1 **Projection of Experience**—If any projection of experience is made in determining the dividend factor of any dividend factor class, the actuary should project experience for all classes of that dividend factor for a line of business to the same point in time. The actuary should limit such projections to a relatively short time frame (for example, the period for which a dividend scale is likely to remain

appropriate) and should develop projections consistently for dividends on both policies in force and new business.

3.3.2 **Dividend Factor Classes**—When providing advice with respect to creating, changing, or combining dividend factor classes, the actuary should consider characteristics such as the following:

- a. the similarity of the policy types;
- b. the structure of the policy factors;
- c. the similarity of the actual experience;
- d. the time period over which the policies were issued; and
- e. the underwriting and marketing of the policies.

The actuary may use the same dividend factor class for policies with different actual experience when this difference is charged for elsewhere. For example, the dividend factor related to mortality used for permanent policies resulting from term conversion may be the same as that for regularly underwritten policies, even though the actual experience is different, provided that the appropriate charges for material differences in mortality experience, net of expense savings, are charged to the term policies.

3.3.3 **Uniform Criteria**—In placing policies in their respective dividend factor classes, the actuary should base placement on uniformly applied criteria such as criteria designed to group similar experience. The actual occurrence or absence of a claim on a particular policy should not be a criterion for placement of that policy in a particular dividend factor class.

3.3.4 **Dividend Factors for New Policies**—Dividend factors for new policies or products commonly differ from those of older, otherwise similar policies. When setting dividend factors that differ for otherwise similar old and new policies, the actuary should consider (a) actual experience, if available, and (b) assumptions that are reasonable and methods that are equitable, in the actuary's professional judgment.

3.4 **Policy Factors**—In the calculation of dividends for a particular policy, the actuary may use the actual policy factors for that policy or approximations to the actual policy factors that the actuary judges appropriate.

3.5 **Mortality, Morbidity, and Policy Termination**—The actuary may base the dividend factors related to mortality, morbidity, or policy termination on a variety of characteristics or a combination thereof. Examples of such characteristics include, but are

not limited to, age, gender, duration, geographic location, marketing method, plan, size of policy, and risk class.

- 3.6 **Investment Income**—The actuary should reflect the investment experience of the line of business for which dividends are being determined in setting a dividend factor related to investment income. The dividend factor related to investment income may reflect investment experience net of investment expenses or, alternatively, investment expenses may be treated separately as expenses. The actuary should consider the treatment of capital gains and losses and taxes in setting the factor. The actuary should use a reasonable basis for allocating investment income to policies, whether using portfolio, segmentation, investment generation, or any other methods.
- 3.7 **Policy Loans**—The actuary may reflect the effect of policy loans in setting a dividend factor related to investment income. In determining the effect of policy loans, the actuary should consider the policy loan interest rate, the treatment of policy loan expenses, and whether policy loan interest is aggregated with other investment income recognizing the utilization rate of loanable funds or whether policy loan interest is passed through directly to borrowing policyholders.
- 3.8 **Expense**—The actuary should consider expense experience in setting a dividend factor related to expenses. In considering expense experience, the actuary should allocate direct costs (those that can be related to a specific group of policies) to the policies generating those costs. The actuary should reasonably allocate indirect costs, such as overhead. The actuary should develop dividend factor classes and dividend factors related to expenses such that total expenses charged to each class are reasonable.
- 3.9 **Reinsurance**—The actuary should review the nature of any applicable reinsurance arrangement and determine the allocation, if any, of the impact (positive or negative) of reinsurance to specific blocks of business. If a reinsurance agreement is reflected in the determination of dividends, the actuary may reflect its impact in the dividend factors such as those related to expenses or mortality, or elsewhere in the dividend framework.
- 3.10 **Tax**—The actuary may determine a dividend factor related to taxes without reflecting modest variations in taxes among jurisdictions. The actuary should consider material variations in applicable laws in determining a dividend factor related to taxes, consistent with the analyses underlying other experience.
- 3.11 **Stockholder Retention on Policies Originally Issued by a Stock Company**—The actuary should consider applicable state law with respect to stockholder retention charges on participating policies. The actuary should not ordinarily change the dividend factors for stockholder retention from those in the scale used in the original dividend illustrations. If the factors are to be changed from the scale used in the original dividend illustrations, the actuary should make corresponding changes to all participating policies in force.

- 3.12 **Termination Dividends**—In establishing or changing termination dividends (dividends that may be provided upon events such as death, maturity or surrender), the actuary should consider the insurer’s intent as represented to the actuary by the insurer for the block of business, if available, and develop termination dividends that are consistent with that intent and supportable within the divisible surplus of the insurer. The actuary should consider applicable state law with respect to termination dividends.
- 3.13 **Illustrated Dividends Not Subject to ASOP No. 24**—The actuary should determine dividends to be used in illustrations not subject to ASOP No. 24 so that they reasonably relate to actual dividends recently determined for payment on policies in force.
- The actuary should consider whether illustrated dividends can be supported by recent experience. If not, the actuary should disclose this and consider the appropriateness of recommending a reduced scale for illustrations.
- 3.14 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41, *Actuarial Communications*. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.2.
- 3.15 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Report**—When advising an insurer on dividends subject to this standard of practice, or on the dividend framework, the actuary should issue an actuarial report in accordance with ASOP No. 41 to the insurer stating the actuary’s advice, unless another actuary advising the same insurer is issuing such an actuarial report that incorporates such advice.
- 4.2 **Disclosures Concerning Process of Dividend Determination**—The actuary should disclose the following items in appropriate detail in the actuarial report:
- a. a description of the process and dividend framework used to determine dividends, the manner in which the policy and dividend factors were reflected in that process, and any material change in process or dividend framework since the last dividend scale;
 - b. whether the contribution principle has been followed and, if not, the basis used for dividend allocation;
 - c. if the contribution principle is being applied to divisible surplus for a period other than the current year, the procedures used for such application;

- d. a description of the use of any significant approximations, simplified procedures, and practical adjustments to dividends, and the rationale for that usage;
- e. a description of the dividend factor classes used and any material changes in such classes or in placement of policies within them;
- f. a description of the policy factors and any material change in practice with respect to their determination or use;
- g. a description of the dividend factor values used and any material changes in such values, including an identification of dividend factors with more than one dividend factor class. If a projection of experience has been used in setting a dividend factor, the type and extent of usage should be stated;
- h. a description of the approach used for allocating investment income to the policies covered by the report. If the approach for a given group of policies has changed, or if a previously unused approach is to be introduced for a new group of policies, the report should identify the approach and include a full description of the nature, rationale, and effect of such approach;
- i. for the dividend factors related to stockholder retention, a description of the method, the actual factors, and any material changes in values of these factors since the last dividend scale change;
- j. if the insurer provides for termination dividends, a description of the processes used to determine termination dividends and any material changes in practice with respect to the determination of termination dividends since the last report;
- k. for illustrations that are not included in the scope of ASOP No. 24, a description of the methods used to determine illustrated dividends;
- l. a description of any illustrated dividends that cannot be supported by recent experience;
- m. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- n. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- o. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

The determination of dividends on participating life insurance policies was a fundamental part of actuarial practice in the United States before the founding of actuarial organizations. Principles were defined early and have not changed. Practices have changed. Broad averaging of experience was generally used until the early 1970s. Because of newly emerging products with differentiated pricing, newly emerging differences in experience factors, and increased computer speed and capacity, dividend practices shifted toward more refined reflections of cost and income.

There have been no fundamental changes in life insurance dividend practices since the 1980s. The general trend in practice has been to develop refinements in classes of business. This has paralleled the development of dividend frameworks that are more refined and computer systems that are capable of handling the additional refinements.

The determination of dividends for disability insurance policies has a shorter history than that for life insurance, but the principles are similar.

One trend of the 1990s was the development of closed blocks of participating business, usually as a result of the demutualization of mutual life insurance companies. These closed blocks, according to their operating rules, are self-supporting and preserve the reasonable dividend expectations of their policyholders. The determination of dividends for policies in closed blocks follows the principles outlined in this ASOP. The divisible surplus for the closed block is set so as to exhaust the assets when the last policy terminates, while avoiding the creation of a tontine.

Some insurers have sold blocks of participating individual policies to a reinsurer. In such a situation, the guidance provided by this standard applies to any actuaries providing professional services, as defined in this standard, to an insurer with respect to those policies.

In 1976, the Society of Actuaries appointed a Committee on Dividend Philosophy to consider this subject. Building on the work and recommendations of that committee, the American Academy of Actuaries' (Academy) Committee on Dividend Principles and Practices formulated a set of *Recommendations* for the participating individual life insurance business of mutual companies that was adopted by the Board of Directors of the Academy in 1980. In 1985, the Academy board adopted a revised set of *Recommendations* that covered participating individual life insurance and participating annuity contracts of both mutual and stock companies. The original ASOP No. 15, *Dividend Determination for Participating Individual Life Insurance Policies and Annuity Contracts*, was a reformatted version of those *Recommendations*. This

revision has been updated to reflect current dividend determination practices and to add individual disability insurance to its scope.

Current Practices

The actuary may provide professional services in two principal areas with respect to dividends. The actuary is normally involved in the determination of dividends, using the dividend framework of the insurer. In addition, the actuary may be involved in advising the insurer with respect to the dividend framework. In providing such services, current practices, such as the following, provide a background for dividend determination.

For typical insurers, management recommends an aggregate amount available to be distributed to policyholders as dividends (i.e., divisible surplus), actuaries recommend an allocation of that amount to individual policies, and the board approves the entire process. Divisible surplus may be determined for the organization as a whole or may be determined for specific lines of business within the organization, including closed blocks or participating lines of business operated by stock life insurers. Also, some insurers have developed policies that are participating but upon which dividends are not anticipated to be paid. For these policies, the insurer determines whether there is any divisible surplus to be allocated to the policies in the line of business.

Dividends may be calculated for a company as a whole but it is more common that dividends are calculated on a “line of business” basis. For this purpose, “line of business” varies by company. Some companies may view the entire individual life block as a single line of business while others may break that down into two or more separate lines. For dividend purposes, disability insurance is often treated as a separate line. Annuity business is also often separated from other lines for dividend purposes.

The use of the contribution principle in determining dividends is generally accepted practice in the United States. Methods of applying the contribution principle in dividend determination described in actuarial literature include the following:

1. the contribution or source of earnings method;
2. the asset share method;
3. the fund method;
4. the experience premium method;
5. the percentage of premium method; and
6. the reversionary bonus method.

Some of these methods, such as the percentage of premium method, refer primarily to the formula used to calculate dividends. Other methods, such as the asset share method, refer

primarily to the process used. Much of the standard is implicitly written in terms of the contribution method, but the standard should be understood in terms of analogous effects under the other methods.

It is the application of a particular method, by means of the dividend factors, that determines whether or not it follows the contribution principle, not the method itself. Also, it may be that a particular method, which does not of itself satisfy the contribution principle, will do so when termination dividends (see section 3.12) are taken into account.

Frequently the calculation of dividend factors takes place at two levels. At the detail level (policy form, issue age, issue year, gender, etc.) the actuary seeks a formula that is simple to administer while producing equitable dividends. A very common formula is the three-factor dividend formula with a dividend factor related to investment, a dividend factor related to mortality, and a dividend factor for all other sources (primarily expenses). After the actuary has selected a formula that the actuary thinks is appropriate, the actuary tests it at a model level (quinquennial issue ages, major policy forms, selected issue years, etc.), using assets share calculations with a complete set of assumptions. The testing determines whether the selected scale is (in the actuary's professional judgment) reasonable and equitable. The dividend factors may reflect experience directly in one or more of the three factors, but more often experience is reflected in the asset share assumptions.

A simplified approach to the determination of dividends for disability policies is common for several reasons. It is more difficult to know claim costs with certainty because of the volatility of morbidity results. The product offerings in these areas tend to be quite complex, with many potential dividend factor classes. An approach for these products may include a simplified formula for paying dividends, such as a percentage of premium or an experience premium determined from underlying experience, and a broad application of the definition of dividend factor class.

As stated in section 3.2 of the standard, practical limitations are part of the dividend framework. In determining dividends, actuaries commonly make adjustments to dividends for a variety of reasons, such as the following:

1. to reflect unusual gains or losses on certain supplementary benefit riders;
2. to reflect losses from the presence of settlement option guarantees;
3. to smooth the transition from one dividend scale to another;
4. to provide consistency in quantity discounts made to varying degrees in the gross premium structure;
5. to serve as a balancing item so that aggregate dividends equal aggregate divisible surplus;

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6. to distribute gains from extraneous sources such as nonparticipating benefits or lines of business; and
7. to smooth the incidence of dividends within a dividend scale by policy duration.

Determination of dividends requires analysis of the actual experience of the participating block for which the dividends are being determined. Maintaining distinct accounting for participating business and for nonparticipating business and by line within each of these businesses may be helpful for this purpose.

In allocating divisible surplus to policies, a wide variety of acceptable practice exists in the determination of dividend factors and the treatment of dividend factors in the dividend framework. The actual experience upon which dividend factors are based commonly varies by several characteristics. For example, expenses may vary by plan, size of policy, marketing method, level of policyholder service, and other items. Also, details of taxation vary widely, depending on applicable laws in various jurisdictions. Differences in dividend frameworks are also common among insurers. Dividends may be calculated on a pre-tax basis or the dividend framework may include a dividend factor related to taxes. Some products of some insurers provide for termination dividends and there is a wide variety of practices with respect to termination dividends.

Where an insurer is operating a closed block of participating policies under operating rules developed in a demutualization, the insurer continues to set the divisible surplus for the participating policies, while the actuary continues to use the dividend framework to determine dividends for the policies based on the contribution principle, as defined in the standard. However, as described in ASOP No. 33, *Actuarial Responsibilities with Respect to Closed Blocks in Mutual Life Insurance Company Conversions*, aggregate dividends in a closed block are to be managed so as to exhaust the assets when the last policy terminates, while avoiding the creation of a tontine. In such situations, actuaries commonly include in dividend work an evaluation of the financial position of the closed block relative to the principle of exhausting the assets while avoiding a tontine. Also, as the operating rules for the closed block may refer to one or more dividend factors, actuaries commonly refer to the operating rules for the closed block in setting the dividend factors.

The actuary may have responsibilities in addition to the requirements of this ASOP. For example, the Exhibit 5 Interrogatories of the National Association of Insurance Commissioners' current annual statement address additional issues with respect to the determination of dividends (see section 3.13 of this standard).

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this actuarial standard of practice (ASOP), then titled *Dividends for Individual Participating Life Insurance, Annuities, Disability Insurance, and Long-Term Care Insurance*, was issued in March 2005, with a comment deadline of September 30, 2005. Fourteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force to Revise ASOP No. 15 carefully considered all comments received, and the Life Committee and the ASB reviewed (and modified, where appropriate) the proposed changes to the ASOP. Summarized below are the significant issues and questions contained in the comment letters and responses to each. The term “reviewers” includes the task force, the Life Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	Several commentators suggested various editorial changes in addition to those addressed specifically below.
Response	The reviewers implemented such changes if they enhanced clarity and did not alter the intent of the section.
Comment	One commentator noted that if interest earned is less than required, there may be yearly dividend decreases and policyholder complaints. The commentator suggested that it may be better to level scales, build surplus, and develop dividends with an increasing pattern.
Response	The reviewers noted that the development of such scales is a determination of divisible surplus, which is a decision by the insurer and not within the scope of the standard.
Comment	Two commentators suggested that the cost of reinsurance might be taken into account in the distribution of costs among policyholders.
Response	The reviewers agreed and created new section 3.9, Reinsurance.
Comment	Some disability income policies have been issued as participating but where no dividend is anticipated to be paid. One commentator suggested the standard address (a) whether it is appropriate to offer such policies under the contribution principle, and (b) how the actuary is to determine dividends.
Response	The reviewers believed determining the appropriateness of policy offerings was beyond the scope of this standard. The reviewers disagreed with the commentator’s request that the standard discuss how to determine dividends.
Comment	One commentator noted that some blocks of individual participating insurance have been sold to a reinsurer and asked about the scope of the standard in such a situation.
Response	The reviewers noted that the standard applies to actuaries providing professional services on dividends whether working for a direct insurer or a reinsurer.

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Comment	One commentator noted that, in the case of a closed block of participating policies, one or more dividend factors, such as the factor related to expenses, may be specifically addressed in a plan of reorganization. The commentator suggested the standard should provide guidance in this situation.
Response	The reviewers noted that the scope of the standard recognized that the actuary should satisfy the requirements of “other legally binding authority” in performing professional services.
Comment	Several commentators believed that the distinction in guidance for paid dividends and illustrated dividends was unclear.
Response	The reviewers assessed the scopes of ASOP Nos. 15 and 24 and believed they were clear.
Comment	<p>Two commentators made comments that can be summarized in three general areas:</p> <ol style="list-style-type: none"> 1. The standard should provide more guidance to actuaries in the area of the actuary’s responsibility to act in the beneficial interest of the policyholder in determining dividends and the latitude the actuary may have in following the contribution principle. 2. The standard did not provide sufficient detail in the level of guidance for performing professional services, both in the dividend framework and determining dividend factors. 3. The standard should address the role of the actuary, the insurer, and the policyholder in determining divisible surplus.
Response	<ol style="list-style-type: none"> 1. The reviewers assessed the standard with respect to the actuary’s responsibility to act in the beneficial interest of the policyholder and the latitude the actuary may exercise in following the contribution principle and believed the standard provided appropriate guidance and reflected accepted practice. 2. The reviewers assessed the level of detail and made appropriate revisions. 3. The reviewers noted that determining divisible surplus was outside the scope of the standard.
Comment	Several commentators stated that the determination of dividends for participating long-term care policies does not yet have generally accepted practices and should be outside the scope of this standard.
Response	The reviewers agreed and removed references to long-term care policies.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested that the standard should clearly state that it covers policyholder dividends whether the policy is issued by a stock, fraternal, or mutual insurer.
Response	The reviewers agreed and revised the language in this section to include these entities.
Section 1.2, Scope	
Comment	One commentator asserted that the actual payment of future dividend scales should be tightly and permanently linked to those illustrated at issue.
Response	The reviewers believed that the standard adequately addressed the dividend allocation process and that the insurer may change the dividend allocation process, working through the dividend framework, dividend factors, and divisible surplus, resulting in dividend scales that may differ markedly from those originally illustrated.
SECTION 2. DEFINITIONS	
Comment	A few commentators asked for more clarity in the definitions of 2.3, Dividend Determination; 2.4, Dividend Factor; 2.6, Dividend Framework; and 2.8, Policy Factors (now 2.9).
Response	The reviewers agreed and amended the definitions.

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Section 2.2, Contribution Principle	
Comment	Some commentators suggested that the definition of contribution principle should clarify the point that policies are grouped into dividend factor classes for the purpose of determining dividends and that the distribution of surplus among policies is based on such factor classes.
Response	The reviewers agreed that such clarity is important and changed the definition of the contribution principle.
Comment	One commentator asked for clarification of the change in the definition of “contribution principle” because the commentator believed this suggested no difference from current practice.
Response	The reviewers added the word “reflects” to acknowledge the impossibility of distributing divisible surplus to policies literally in exact proportion to the contribution to divisible surplus.
Section 2.4, Dividend Factor	
Comment	One commentator suggested that the definition be clarified to reflect experience.
Response	The reviewers agreed and modified the definition.
Section 2.7, Policies	
Comment	One commentator suggested that the definition of “policy” with respect to group certificates should be clarified to cover group certificates that include dividend provisions similar to individual participating policies.
Response	The reviewers agreed and changed the definition to better reflect that concept.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Contribution Principle	
Comment	One commentator suggested that the reference to the contribution principle being applied over an extended period of time be transferred from the appendix to section 3.1, where it was in the previous standard.
Response	The reviewers agreed and restored this reference to section 3.1.
Comment	One commentator suggested that the contribution principle should include smoothing out and leveling variations in factors, such as mortality, to avoid anomalies in the progression of dividends by duration.
Response	The reviewers agreed but believed that the standard adequately covered this.
Comment	One commentator noted that some dividend frameworks may provide for a step-up in premium that may be offset by a dividend. The commentator asked whether the contribution principle is being followed in that situation.
Response	The reviewers noted that the standard provides for approximations, simplified processes, or other adjustments considering relevant conditions and circumstances. Such latitude is intended to allow for a variety of reasonable practices in following the contribution principle.
Section 3.3, Dividend Factors	
Comment	One commentator suggested that the list of reasons for making adjustments to dividends or dividend factors, which was in appendix 1 of the exposure draft, be moved to the end of this section or be cross referenced.
Response	The reviewers believed the list of reasons represented current practice and was more appropriate in the appendix as education. The reviewers changed the wording of the appendix to refer to section 3.2.
Section 3.3.2, Differences between Dividend Factor Classes (now Dividend Factor Classes)	
Comment	One commentator suggested that the characteristics to be considered in defining dividend factor classes be expanded, by making clear that those in the standard are examples, not an exclusive list.
Response	The reviewers agreed but believed that the existing language allowed consideration of other characteristics.

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Section 3.3.3, Uniform Criteria	
Comment	One commentator suggested a slight editing of the statement in the draft concerning uniform criteria.
Response	The reviewers agreed and revised the language.
Section 3.3.4, Dividend Factors for New Policies	
Comment	One commentator suggested that, when setting a dividend factor that differentiates between old and new policies, it may not be appropriate to set that dividend factor on a conservative basis given a fixed distributable surplus.
Response	The reviewers agreed and revised section 3.3.4.
Section 3.5, Mortality, Morbidity, and Policy Termination	
Comment	One commentator suggested it be made clearer that the list of examples in this section is not exclusive.
Response	The reviewers agreed and added the appropriate wording.
Section 3.8, Tax (now section 3.10)	
Comment	One commentator suggested that generally accepted practice allows dividend formulas determined on a pre-tax basis with no deduction for taxes and that the standard should make that clear.
Response	The reviewers agreed but believed the standard adequately covered this.
Section 3.9, Stockholder Retention on Policies Originally Issued by a Stock Company (now section 3.11)	
Comment	One commentator suggested that determination of shareholder retention as discussed in this section is a part of the determination of divisible surplus and therefore not covered by this standard.
Response	The reviewers believed that shareholder retention charges, as they relate to the dividend framework, were appropriately addressed in the revised standard.
Section 3.11, Illustrated Dividends Not Subject to ASOP No. 24 (now section 3.13)	
Comment	One commentator suggested that the standard clarify that illustrated dividends not covered by ASOP No. 24 should reasonably relate to recent paid dividends, not all past dividends paid.
Response	The reviewers agreed and amended this section to reflect that.
APPENDIX (now Appendix 1)	
Comment	One commentator took exception to including experience premium method and percentage of premium method as involving simplified formulas.
Response	The reviewers made a clarifying revision to the sentence to address the commentator's concern.



ACTUARIAL STANDARDS BOARD

**Repeal of
Actuarial Standard
of Practice
No. 16**

**Actuarial Practice Concerning
Health Maintenance Organizations and
Other Managed-Care Health Plans**

**Developed by the
Task Force to Revise ASOP No. 16 of the
Health Committee of the
Actuarial Standards Board**

**Repealed by the
Actuarial Standards Board
April 2007**

(Doc. No. 104)

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April 2007

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in HMOs and Other Managed-Care Health Plans

FROM: Actuarial Standards Board (ASB)

SUBJ: Repeal of Actuarial Standard of Practice (ASOP) No. 16

This document notes the repeal of ASOP No. 16, *Actuarial Practice Concerning Health Maintenance Organizations and Other Managed-Care Health Plans*.

Background

Managed care health plans (MCHPs) accounted for a small proportion of total health care financing until the 1980s. The actuarial information related to them was much less abundant than for indemnity health plans. In June 1989, the ASB requested that its Health Committee draft a standard of practice concerning such plans and released an exposure draft in October 1989. At the time, the standard was written to supplement the general health insurance standards and to deal with a number of considerations unique to or of greater significance for managed-care health plans.

Given the evolution of HMOs and managed care health plans over the past fifteen years, much of the information in the current standard is dated. Further, the standard gets into more detail and educational background than generally expected in an ASOP. While this type of information and guidance was likely necessary at the time it went into effect, many of the issues included in the standard are commonplace today.

The current scope for ASOP No. 16 applies for actuaries “performing professional services in connection with areas requiring special consideration for HMOs and other MCHPs.” Many of the items generally refer to practice as it relates to determining liabilities and setting rates. In general, it is believed that the guidance provided in the standard is covered, either explicitly or implicitly, in other ASOPs (for example, Nos. 5, 8, 23, 28, 31, and 42). Appendix 1 provides a grid listing pertinent sections from ASOP No. 16 and a cross reference to other ASOPs, NAIC Instructions, or the Code of Professional Conduct, where actuarial guidance exists for the related item, or notes where the item was considered educational and should not be included in the body of any ASOP.

Exposure Draft

The exposure draft of this repeal document was issued in a blast e-mail in November 2006 with a comment deadline of January 15, 2007 that was subsequently extended to February 1, 2007. Thirteen comment letters were received. Most comments supported the repeal, but several raised issues that were considered by the Task Force to Revise ASOP No. 16, the Health Committee, and the Actuarial Standards Board in finalizing this repeal document. For a summary of the substantive issues and the reviewers' responses, please see appendix 2.

The Actuarial Standards Board wishes to thank all who commented on the repeal.

Action

The ASB voted in April 2007 to repeal ASOP No.16.

ASOP No. 16 is repealed for any work performed on or after April 26, 2007.

Appendix 1

Note: This appendix is prepared for informational purposes only.

The Task Force to Revise ASOP No. 16 prepared the following grid highlighting sections 2 and 5 of the current ASOP as a cross reference against other ASOPs, NAIC instructions, or the Code of Professional Conduct to reflect where appropriate actuarial guidance already exists for the related item or where the item would have been considered educational material and, therefore, not included in any proposed revision other than possibly an appendix.

Current Section		Reference to Applicable Standards or Other Guidance
Section 2	Definitions	
2.1	Capitation	ASOP No. 5
2.2	Exclusive Provider Organization	Educational – not needed in standard
2.3	Fee-For-Service	Educational – not needed in standard
2.4	Funding Arrangements	Educational – not needed in standard
2.5	Group-Model HMO	Educational – not needed in standard
2.6	Group Practice	Educational – not needed in standard
2.7	Health Care Budget	Educational – not needed in standard
2.8	Health Maintenance Organization	Educational – not needed in standard
2.9	Hold-Harmless Clause	Educational – not needed in standard
2.10	Indemnity Plan	Educational – not needed in standard
2.11	Individual Practice Association (IPA) – Model HMO	Educational – not needed in standard
2.12	Managed-Care Health Plan	Educational – not needed in standard
2.13	Mixed-Model HMO	Educational – not needed in standard
2.14	Non-Indemnity Plan	Educational – not needed in standard
2.15	Point-of-Service Product	Educational – not needed in standard
2.16	Preferred Provider Organization	Educational – not needed in standard
2.17	Prepaid Health Care Plan	Educational – not needed in standard
2.18	Primary Care Physician	Educational – not needed in standard
2.19	Providers	Educational – not needed in standard
2.20	Risk Pool	
2.21	Specialist	Educational – not needed in standard
2.22	Staff-Model HMO	Educational – not needed in standard
2.23	Uncovered Expenditures	NAIC Blank Instructions
2.24	Withhold	Educational – not needed in standard

Section 5	Analysis of Issues and Recommended Practices	ASOP No. 5; ASOP No. 8; ASOP No. 42
5.1	Transfer of Financial Risk to Providers	ASOP No. 5 (3.3.6, 3.5.1 - 3.5.5); ASOP No. 8
5.1.1	Capitation Contracts with Providers	ASOP No. 5 (3.3.6); ASOP No. 42 (3.5.4)
5.1.2	Stop-Loss Provisions	ASOP No. 5; ASOP No. 42 (3.5.3)
5.1.3	Supplemental Payments	ASOP No. 42 (3.5.3, 3.5.5); ASOP No. 5
5.1.4	Financial Condition of Capitated Providers	ASOP No. 42 (Sec 3.2, 3.5); ASOP No. 5
5.1.5	Primary Care Physician Financial Incentives	ASOP No. 42 (Sec 3.5.5); ASOP No. 5
5.1.6	Provider Settlements (General)	ASOP No. 42 (Sec 3.5); ASOP No. 5
5.1.7	Covered Liabilities	Implicit in Code of Professional Conduct, General Disclosures, Reliance Section
5.1.8	Experience Rating	Educational – not needed in standard
5.2	Management of Health Care Delivery System	
5.2.1	Effect on Claims Liability	ASOP No. 5 (3.3.6); ASOP No. 42 (3.2.1 - 3.2.2)
5.2.2	Effect on the Rate Setting Process	ASOP No. 5 (3.2.1-3.2.7); ASOP No. 8 (5.3 - 5.5); ASOP No. 31 (3.7.1 - 3.7.2); ASOP No. 42 (3.2.1 - 3.2.6); ASOP No. 7; ASOP No. 22
5.2.3	Changes in Mix of Providers	ASOP No. 5 (3.3.6); ASOP No. 8 (3.2.4); ASOP No. 42 (3.5.1 - 3.5.5)
5.2.4	Effect on Data Monitoring	ASOP No. 5 (3.6); ASOP No. 23
5.2.5	Basis for Claim Reports	ASOP No. 5 (3.4); ASOP No. 23 (3.4 - 3.5)
5.3	Multiple Delivery Systems and Financial Structuring	
5.3.1	Scope of Services by Contract	ASOP No. 5 (3.2.1, 3.2.6, 3.3.6)
5.3.2	Change in Membership Mix	ASOP No. 5 (3.2.1, 3.2.4, 3.3.6)
5.4	Capitation Paid to a Provider	ASOP No. 8 (3.2.5)
5.5	Health Care Budget	ASOP No. 8 (3.2.2)
5.6	Reliance on Data or Other Information Supplied by Others	ASOP No. 8; ASOP No. 23; Code of Professional Conduct
5.7	Documentation	ASOP No. 8; ASOP No. 31; ASOP No. 41

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the repeal of ASOP No. 16, *Actuarial Practice Concerning Health Maintenance Organizations and Other Managed-Care Health Plans*, was issued to the membership by blast e-mail in November 2006 with a comment deadline of January 15, 2007 that was subsequently extended to February 1, 2007. Thirteen comment letters were received, one of which was submitted on behalf of multiple commentators, such as a firm or committee. Seven commentators stated they agreed with the repeal of this ASOP. Four commentators did not make any affirmative statement either for or against the repeal but did not raise any opposition to the repeal. Two of these raised certain process issues and are not included in the responses below, while the other two offered comments and suggestions. Two commentators either opposed or offered an alternative to repealing ASOP No. 16. The ASB, Health Committee, and Task Force to Revise ASOP No. 16 carefully considered all comments received. Summarized below are the significant issues and questions contained in the comments and responses to each.

GENERAL COMMENTS	
Comment	One commentator suggested that ASOP No. 16 be retained with all text being deleted except the references to the ASOPs that are appropriate to HMOs and other managed-care health plans.
Response	This repeal document lists the ASOPs that provide guidance for HMOs and other managed-care health plans. In addition, appendix 1 has been added, which shows sections 2 and 5 of ASOP No. 16, and whether guidance is provided in other ASOPs, by NAIC instructions, or by the Code of Professional Conduct, or the material is considered educational and is not appropriate for inclusion in an ASOP.
Comment	One commentator opposed repeal of ASOP No.16. The commentator expressed concern regarding certain regulatory issues and statutory reserve requirements. The commentator also stated that he/she believes the purpose of an ASOP is to inform/educate actuaries of past and current risks that have been identified and urged the task force to revise ASOP No. 16 rather than repeal.
Response	The reviewers believe that instruction on regulatory and statutory requirements should not be explicitly incorporated in an ASOP. All ASOPs require that the actuary comply with applicable law. Both ASOP No. 5, <i>Incurred Health and Disability Claims</i> , and ASOP No. 42, <i>Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims</i> , which deal with actuarial liabilities, cover this topic. The reviewers believe that the purpose of ASOPs is to give guidance on appropriate practices, not to educate and inform.

Comment	One commentator expressed concern that statutory minimum reserves for uncovered claims, which are mentioned in ASOP No. 16, are not covered in ASOP No. 42 and thus not identified as a standard of practice.
Response	The reviewers note that the concern expressed by the commentator is implicitly covered in NAIC Blank Instructions. As noted in the previous response, the reviewers believe that instruction on regulatory and statutory requirements should not be explicitly incorporated in an ASOP. All ASOPs require that the actuary comply with applicable law. Both ASOP Nos. 5 and 42, which deal with actuarial liabilities, cover this topic.
Comment	One commentator suggested certain items from ASOP No.16 be incorporated into other ASOPs, namely, handling of risk sharing-capitation, withhold, and stop loss provisions; financial conditions of risk sharing providers; experience rating as it compares to community rating; PCP financial incentives; and effect of data monitoring. The commentator also suggested adding or expanding comments on reliance on clinic data and personnel, highlighting differences between the different types of managed-care health plans, and risk based capital.
Response	The reviewers believe that the other ASOPs noted in the repeal document adequately address the items from ASOP No. 16 as noted above. The reviewers note that appendix 1 has been added, which indicates where these items are covered in other ASOPs or are considered educational material and would not have been included in any revision to ASOP No. 16. The task force also believes the other items that the commentator suggested be added to any revision are considered educational and are not appropriate for inclusion in an ASOP.



**Actuarial Standard
of Practice
No. 17**

Expert Testimony by Actuaries

Revised Edition

**Developed by the
ASOP No. 17 Task Force of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2018**

Doc. No. 192

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June 2018

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Expert Testimony by Actuaries

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 17

This document contains the revision of ASOP No. 17, *Expert Testimony by Actuaries*.

History of the Standard

The ASB originally adopted ASOP No. 17, *Expert Testimony by Actuaries*, in 1991. Since that time, actuarial practice in this area has evolved. Under the direction of the ASB, the Expert Witness Task Force revised ASOP No. 17 in 2002 to be consistent with the then current ASOP format and to reflect current practices in the area of expert testimony. ASOP No. 17 was further updated for deviation language, effective May 1, 2011. In 2015, the ASB concluded that this ASOP should be revised to reflect applicable law and regulation.

Exposure Draft

The exposure draft was issued in April 2017 with a comment deadline of June 30, 2017. Eleven comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2.

Notable Changes from the Exposure Draft

Changes made to the exposure draft include the following:

1. Section 1.2, Scope, was reworded to provide additional guidance regarding the circumstances under which the standard applies.
2. The definition of expert in section 2.4 was clarified.
3. Section 3.2, Reliance Upon Attorney or Other Representative of the Principal, was clarified.
4. Section 3.8, Hypothetical Questions, was clarified.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in June 2018 to adopt this standard.

ASOP No. 17—Doc. No. 192

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 17

EXPERT TESTIMONY BY ACTUARIES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries providing **expert testimony**.
- 1.2 **Scope**—This standard applies to actuaries who are qualified as **experts** under the evidentiary rules applicable in a forum when they provide **testimony** in court hearings, dispute resolutions, depositions, rate hearings, legislative hearings, or other similar proceedings.

This standard does not apply to an individual whose **testimony** and qualification as an **expert** are unrelated to the individual's education, training, experience, or employment as an actuary.

This standard supplements the *Code of Professional Conduct* (Code) and is intended to provide specific guidance with respect to the actuary providing **expert testimony**. Reference should also be made to other actuarial standards of practice concerned with the actuarial substance of the assignment.

Nothing in this standard is intended to discourage reasonable differences of actuarial opinion, or to inhibit innovation in advancing the practice of actuarial science. Further, this standard is not intended to restrain the selection of **actuarial assumptions** or **actuarial methods**, the communication of actuarial opinions, or the relationship between the actuary and a **principal**. Nothing in this standard is intended to prevent the actuary from challenging the application or a particular interpretation of existing precedent, law, or regulation where such application or interpretation would, in the opinion of the actuary, be inconsistent with otherwise appropriate actuarial practice.

Nothing in this standard is intended to require any communication or action that is inconsistent with the rules of evidence or procedure of any court or other judicial body, legislative forum, administrative forum, arbitral forum, or other forum in which the actuary testifies. To the extent that the standard is inconsistent with the evidentiary and procedural rules applicable in the forum in which the actuary offers **expert testimony**, the actuary should follow the forum's rules of evidence and procedure and any other applicable rules in the forum.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for all **expert testimony** provided by the actuary on or after December 1, 2018.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Assumption**—The value of a parameter or other actuarial choice having an impact on an estimate of a future cost or other actuarial item under evaluation.
- 2.2 **Actuarial Method**—A procedure by which **data** or assumptions are analyzed or utilized for the purpose of estimating a future cost or other actuarial item.
- 2.3 **Data**—Numerical, census, or classification information, or information derived mathematically from such items, but not general or qualitative information. **Actuarial assumptions** are not **data**, but **data** are commonly used in the development of **actuarial assumptions**.
- 2.4 **Expert**—One who is qualified under the evidentiary rules applicable in the forum to testify as an expert, whether explicitly or by acceptance of the actuary's **testimony**. An actuary who has been engaged to testify, or permitted to testify, with the expectation that the actuary will ultimately qualify as an expert is treated as an **expert** for purposes of this standard, even if the actuary does not testify or is later determined not to qualify as an expert.
- 2.5 **Principal**—Subject to the rules of evidence and procedure and any other rules applicable in the forum, the client or employer of the actuary with regard to the **expert testimony**, depending on the facts and circumstances surrounding the engagement.
- 2.6 **Testimony**—Communication of opinions or findings presented in the capacity of an expert witness at trial, in hearing or dispute resolution, in deposition, by declaration or affidavit or by any other means through which **testimony** may be received. Such **testimony** may be oral or written.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—An actuary providing **expert testimony** performs an important service to the forum, the finder of fact in the forum, and the public by providing information that can be critical to resolution of disputes. This may include explaining complex technical concepts so they can be understood by the audience to whom the **testimony** is directed. Actuaries may

differ in their conclusions even when applying reasonable **actuarial assumptions** and appropriate **actuarial methods**, and a mere difference of opinion between actuaries does not suggest that an actuary has failed to meet professional standards. However, an actuary providing **expert testimony** should, subject to the rules of evidence and procedure and any other rules applicable in the forum, comply with the requirements of the Code.

- 3.2 **Reliance Upon Attorney or Other Representative of the Principal**—An **expert** will ordinarily work closely with the attorney or other representative of the **principal**. An actuary serving as an **expert** may reasonably rely upon the advice, information, or instruction provided by an attorney or other representative of the **principal** concerning the meaning and requirements of the rules of evidence or procedure and any other rules applicable in the forum. An actuary relying on such advice, information, or instruction is not in violation of this standard for having complied with the advice or instruction, or used the information, even if a judge, arbitrator, hearing examiner, or other authority of the forum charged with ruling on procedural, evidentiary, or other matters subsequently determines that the advice, information, or instruction is inconsistent with or violates the rules of evidence, procedure, or any other rules applicable in the forum.
- 3.3 **Review and Compliance**—In offering **expert testimony**, the actuary should comply with all rules of evidence and procedure and any other rules applicable in the forum. In addition, the actuary should review and comply with any applicable actuarial standards of practice, the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States, and the Code.
- 3.4 **Conflict with Laws and Regulations**—If the actuary believes that a relevant law or regulation contains a material conflict with appropriate actuarial practices, the actuary should disclose the conflict, subject to the requirements of the forum, including without limitation all rules of evidence and procedure.
- 3.5 **Conflict of Interest**—The actuary should be aware of the possibility of conflict of interest, and should address any real or apparent conflict of interest in accordance with Precept 7 of the Code.
- 3.6 **Advocacy**—In those circumstances where it is consistent with the rules of evidence and procedure, and any other rules applicable in the forum, an actuary may act as an advocate for a **principal** when giving **expert testimony**. Acting as an advocate does not relieve the actuary of the responsibility to comply with the Code, and to use reasonable **actuarial assumptions** and appropriate **actuarial methods** (unless using **actuarial assumptions** or **actuarial methods** prescribed by law or selected by others that may not be reasonable and appropriate, and so disclosing in accordance with section 3.7).
- 3.7 **Actuarial Assumptions or Actuarial Methods Prescribed by Law or Selected by Others**—If the actuary performs calculations using **actuarial assumptions** or **actuarial methods** prescribed by law or selected by others, the actuary should disclose, subject to the rules of the forum, and to the extent material and relevant, whether the results are consistent with the actuary's own **expert** opinion.

- 3.8 Hypothetical Questions—The actuary may be asked to answer hypothetical questions. Hypothetical questions may fairly reflect facts in evidence, may include only a part of the facts in evidence, or may include **actuarial assumptions** the actuary believes to be unreasonable. If permitted by the rules of evidence and procedure and any other rules applicable in the forum, and by the rulings of a judge or other official charged with overseeing the forum, the actuary may refuse to answer hypothetical questions based upon what the actuary believes in good faith to be unreasonable **actuarial assumptions**.
- 3.9 Testifying Concerning Other Relevant Testimony—Subject to the rules of evidence and procedure of the forum, when the actuary provides **expert testimony** concerning other relevant testimony, including opposing testimony, the actuary should testify objectively, focusing on the reasonableness of the other testimony and not solely on whether it agrees or disagrees with the actuary's own opinion.
- 3.10 Cross Examination—During cross-examinations, subject to the rules of the forum, the actuary is not required to volunteer information that is not fairly encompassed within the scope of the question.
- 3.11 Consistency with Prior Statements—When giving **expert testimony**, the actuary should be mindful of statements the actuary may have made on the same subject. If the actuary employs different **actuarial assumptions** or **actuarial methods** in the current situation, the actuary should be prepared to explain why.
- 3.12 Discovery of Error—If, after giving **expert testimony**, the actuary discovers that a material error was made, the actuary should make appropriate disclosure of the error to the forum or to the **principal** or the **principal**'s representative as soon as practicable. Any such disclosure should be made in accordance with the rules of evidence and procedure and any other rules applicable in the forum.
- 3.13 Limitation of Expert Testimony—The actuary should present **expert testimony** in a manner appropriate to the nature of the forum and consistent with the rules of evidence and procedure and any other rules applicable in the forum. If any constraints are imposed or expected to be imposed on the actuary's ability to comply with the Code or other professional standards, the actuary should consider whether it is appropriate to serve or continue to serve as an **expert**.

Section 4. Communications and Disclosures

- 4.1 Written Testimony—When providing **expert testimony** in writing, the actuary should provide **testimony** in accordance with the rules of evidence and procedure and any other rules applicable in the forum and describe the scope of the assignment, including any limitations or constraints. The written **testimony** should, to the extent appropriate to the forum and intended audience, include descriptions and sources of the **data**, **actuarial assumptions**, and **actuarial methods** used in the analysis.

- 4.2 **Oral Testimony**—When providing **expert testimony** orally, the actuary should provide oral **testimony** in accordance with the rules of the forum and in a manner appropriate to the intended audience. In addition, the actuary should, to the extent practicable and subject to the rules of evidence and procedure and any other rules applicable in the forum, be prepared to provide documentation supporting the oral **testimony**.
- 4.3 **Communication and Disclosure**—When providing **expert testimony**, the actuary should comply with ASOP No. 41, *Actuarial Communications*, and, in addition, disclose the following items, as applicable, and as permitted by the rules of evidence and procedure and any other rules applicable in the forum, and to the extent material to the **testimony**:
- a. material conflicts between laws and regulations and appropriate actuarial practices, as described in section 3.4;
 - b. if the actuary performed calculations using **actuarial assumptions** or **actuarial methods** prescribed by law or selected by others, whether the results are consistent with the actuary's own **expert** opinion, as described in section 3.7; and
 - c. any material errors discovered after giving **expert testimony**, as described in section 3.12.
- 4.4 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: The following appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Since the standard was first adopted, actuaries have become increasingly active as expert witnesses, appearing in a greater variety of venues and addressing an expanding range of topics. As actuaries have become more knowledgeable about providing expert testimony, the need for educational material has lessened to some degree.

Current Practices

Actuaries may be called upon to give expert testimony concerning a broad range of issues. These include, without limitation, matters such as the following:

- a. actuarial present values of retirement or other benefits;
- b. actuarial values incident to a divorce;
- c. adequacy or appropriateness of reserves, premium rates, pricing or underwriting procedures, or provision for administrative costs;
- d. cost impact of claims-made or claims-paid financing;
- e. cost impact of risk classification systems, tort liability decisions, or legislative/regulatory proposals;
- f. actuarial reviews of provider reimbursement amounts, provider network adequacy, provider comparison studies, provider quality reviews, and contractual provisions for various health care services;
- g. lost earnings of a decedent or injured person and the actuarial present value of such lost earnings;
- h. malpractice of an actuary;
- i. actuarial equivalency or other technical provisions in the design or administration of defined benefit pension plans;
- j. faulty design, administration or communication of amendments to defined benefit pension plans;

- k. financial impact on a defined benefit plan of alternative interpretations of, or amendments to, disputed plan provisions;
- l. relationships between risk and return on investments;
- m. value of an insurance company or other entity; and
- n. withdrawal liability assessments under multiemployer benefit plans.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 17, *Expert Testimony by Actuaries*, was issued in April 2017 with a comment deadline of June 30, 2017. Eleven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force carefully considered all comments received, and the General Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

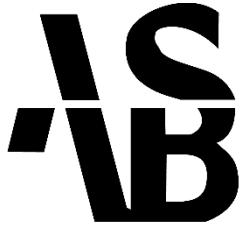
The term “reviewers” includes the Task Force, General Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator noted only that the proposed revisions improve the ASOP. Several commentators had generally favorable comments about the proposed revisions, while providing specific suggestions for certain sections, as outlined below.
Comment Response	One commentator suggested that the ASOP include a reference to Actuarial Board for Counseling and Discipline (ABCD) guidance. The reviewers disagree and note ABCD guidance is readily available and not included in ASOPs. Therefore, the reviewers made no change.
Comment Response	One commentator suggested that the proposed ASOP was repetitious in stating that the rules of the forum must be followed, and stated that the ASOP should explain why so much legal terminology is used in the ASOP. The reviewers concluded that, given the nature of the ASOP as dealing with proceedings that are usually legal in nature, the use of legal terminology is appropriate. Therefore, the reviewers made no change.
Comment Response	One commentator had numerous suggestions for ways in which the ASOP could provide specific advice to actuaries who serve as expert witnesses. The reviewers note that ASOPs are principles-based and do not attempt to be prescriptive, as discussed in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , section 3.1.4. Therefore, the reviewers made no change.
Comment Response	One commentator requested that the ASOP address the issue of actuaries testifying that other actuaries (hired by a different party to a dispute) have violated ASOPs in their testimony. The commentator suggested that the ASOP address the proper way of interpreting ASOPs and further suggested that it is improper for an actuary to testify that another actuary has violated an ASOP. The reviewers believe that the ASOP should not limit the ability of an actuary to testify regarding compliance with the ASOPs. Therefore, the reviewers made no change.

SECTION 1. PURPOSE, SCOPE, CROSS-REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator stated that the scope is clear and appropriate. Another commentator was appreciative of the statement that the standard is not intended to inhibit innovation in advancing the practice of actuarial science.
Comment	One commentator suggested that the first sentence of scope be expanded to include the examples in the definition of testimony, so that it would be clear to a reader who did not have access to the electronic hyperlink.
Response	The reviewers note that the standard format relies on reference to the definitions in section 2 and made no change.
Comment	One commentator stated that it is unclear whether legislative hearings are included, noting that some are adversarial.
Response	The reviewers note that the term “adversarial” was a source of confusion, and modified the scope to avoid the use of that term and to clarify that legislative hearings and similar proceedings are included.
Comment	One commentator stated that rate hearings should not be included in the scope because they should be covered by other standards.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator, referring to the fact that the proposed ASOP did not cover non-actuarial testimony by individuals who happen to also be actuaries, stated that users of such testimony would need some way to understand that the ASOP is not applicable. The commentator suggested that the actuary should so state in his or her written testimony, or be precluded from using initials showing membership in an actuarial organization.
Response	The reviewers disagree and note that the standard cannot prescribe disclosures in cases where the standard does not apply. Therefore, the reviewers made no change in response to this comment.
Section 1.4, Effective Date	
Comment	Three commentators expressed the view that an effective date of four months after adoption is reasonable. Several commentators were concerned that the effective date of four months after adoption of the standard would have an adverse impact on expert witness engagements that were initiated before the date of adoption but not completed as of the effective date. Another commentator suggested the effective date should be 12 months after adoption, with voluntary early adoption.
Response	The reviewers do not believe an effective date occurring in the middle of an engagement would cause any problems, and made no change.
Comment	One commentator stated that the effective date is reasonable but should be clarified to specify which version of the ASOP controls when an engagement started before the effective date and is ongoing after the effective date.
Response	The reviewers believe the effective date is clear and made no change.
SECTION 2. DEFINITIONS	
Section 2.2, Actuarial Method	
Comment	One commentator suggested that “A procedure by which data are analyzed...” should be modified to say “A procedure by which data or assumptions are analyzed....”
Response	The reviewers agree and added “or assumptions” to the definition.

Section 2.3, Data	
Comment	One commentator noted that the definition of “data” was inconsistent with the definition in other ASOPs.
Response	The reviewers agree and modified the definition to be consistent with other ASOPs.
Section 2.4, Expert	
Comment	One commentator stated that the standard should remind actuaries that the term “expert” may include an employee of one of the parties to the controversy.
Response	The reviewers believe that the guidance is clear and made no change in response to this comment.
Comment	One commentator stated that the definition of “expert” is self-referential.
Response	The reviewers note that certain uses of the term “expert” within the definition of “expert” refer to the “evidentiary rules applicable in the forum.” For clarity, these uses of the term were not bolded.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Overview	
Comment	One commentator questioned the statement in the proposed ASOP that an actuary should act with honesty, integrity and competence. The commentator suggested that the ASOP also refer to the purpose of upholding the reputation of the actuarial profession.
Response	The reviewers believe that it is not necessary or desirable to restate the Precepts of the <i>Code of Professional Conduct</i> (Code) in an ASOP. Therefore, the reviewers simplified the language to not duplicate concepts covered by the Code.
Section 3.2, Reliance Upon Attorney or Other Representative of the Principal	
Comment	Several commentators objected to the statement that an actuary is “not responsible” for following the advice or instructions of an attorney or representative of the principal.
Response	The reviewers clarified section 3.2 by substituting “not in violation of this standard” for “not responsible.”
Comment	One commentator noted that the actuary may rely on the principal’s attorney or representative but not on the principal, and asked if this was intended.
Response	The reviewers note this was intentional and made no change.
Comment	One commentator requested guidance on how an actuary should resolve the conflict if a judge or arbitrator decides that the attorney’s advice is contrary to the rules of the forum.
Response	The reviewers believe that the ASOP should not address specific questions relating to the rules of the forum, to which the actuary will be subject regardless of the ASOP. Therefore, the reviewers made no change.

Section 3.6, Advocacy	
Comment	One commentator noted that the rules for advocacy vary by country and suggested that the fact that ASOPs apply only to U.S. practice should be noted in the transmittal memorandum, the standard, or the appendix.
Response	The reviewers note that ASOP No. 1, section 1, addresses this issue. Therefore, the reviewers made no change.
Comment	One commentator suggested that it may be appropriate to define the word “advocate.”
Response	The reviewers disagree and believe that defining “advocate” is not necessary because the ASOP applies when the actuary is providing expert testimony, regardless of whether the actuary is acting as an advocate. Therefore, the reviewers made no change.
Comment	One commentator requested that the phrase “may act as an advocate” be changed to “may or may not act as an advocate.”
Response	The reviewers believe the language is clear and made no change.
Comment	One commentator requested that the phrase “in the actuary’s professional judgement” be inserted between “that” and “may” in the parenthetical phrase.
Response	The reviewers believe the parenthetical phrase is clear and made no change.
Section 3.7, Actuarial Assumptions or Actuarial Methods Prescribed by Law or Selected by Others	
Comment	One commentator suggested that additional text be added to clarify that an actuary is not in violation of the standard if the actuary is unable to make the disclosure required by section 3.7.
Response	The reviewers believe the language is clear and made no change.
Section 3.8, Hypothetical Questions	
Comment	One commentator suggested that section 3.8 should be expanded to include unreasonable assumptions that are not actuarial assumptions, in addition to unreasonable actuarial assumptions.
Response	The reviewers disagree and made no change.
Comment	One commentator suggested that an actuary should not have to answer any hypothetical questions.
Response	The reviewers disagree and note that hypothetical questions may be a valid part of testimony. Therefore, the reviewers made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.4, Additional Disclosures	
Comment	One commentator suggested that in certain circumstances, it may be difficult for an actuary to provide the disclosure required by section 4.4 of ASOP No. 41, <i>Actuarial Communications</i> , relating to material deviations from an ASOP. The commentator also requested that the ASOP provide examples of how a witness could comply with this requirement.
Response	In light of the guidance in the ASOP that an actuary is not required to deviate from the rules of the forum, the reviewers believe that the requirements of this section are not more difficult than other situations in which section 4.4 of ASOP No. 41 would apply. Therefore, the reviewers made no change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 18**

Long-Term Care

Revised Edition

**Developed by the
ASOP No. 18 Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2022**

Doc. No. 206

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March 2022

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Long-Term Care

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 18

This document contains the revision of ASOP No. 18, now titled *Long-Term Care*.

History of the Standard

ASOP No. 18 was adopted by the ASB in 1991 and further revised in January 1999. The 1999 version addressed several new developments in the field of long-term care insurance as well as content that was somewhat educational in nature or overlapped with other ASOPs. In 2019, the ASB approved a proposal to revise the ASOP due to recent regulatory developments and emerging government-run long-term care (LTC) insurance programs.

Exposure Draft

The exposure draft was issued in March 2021 with a comment deadline of September 1, 2021. Four comment letters were received and considered in making changes that were reflected in the final ASOP.

Notable Changes from the Exposure Draft

Notable changes made to the exposure draft are summarized below. Notable changes do not include changes made to improve readability, clarity, or consistency.

1. The scope was clarified regarding application to Medicaid programs and long-range financial planning.
2. References to ASOP No. 28, *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities*, and ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, were added.

Notable Changes from the Existing ASOP

A summary of the notable changes from the existing ASOP are summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. The scope was expanded to include actuarial services for all programs that provide benefits for LTC, including actuarial services related to hybrid products, public programs, and long-range financial projections of Medicaid programs. The title was changed from “Long-Term Care Insurance” to “Long-Term Care” to reflect this expansion.

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2. The scope was modified to clarify that reviewing actuarial services is included.
3. General ASOPs that have been revised or adopted since the last revision of ASOP No. 18, and that affect the actuarial services provided to LTC benefits programs, have been accounted for.

The ASB voted in March 2022 to adopt this standard.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 18

LONG-TERM CARE

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to **long-term care (LTC) benefit plans**, including **LTC** insurance and public programs.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to **LTC benefit plans** sponsored by **insurers** or other entities. The standard applies to actuaries designing, pricing, or determining funding of an **LTC benefit plan**. The standard also applies to actuaries measuring or evaluating **LTC** liabilities within an **LTC benefit plan**. The term “**long-term care benefit plan**” includes plans with short-term (for example, less than twelve consecutive months) and long-term benefit durations. The standard does not apply to actuaries providing actuarial services related to **LTC** benefits for Medicaid-eligible recipients, unless the actuarial services are for a long-range financial projection (generally more than five years) of **LTC** benefit expenditures and eligible recipients under the Medicaid program.

If the actuary is reviewing actuarial services performed with respect to **LTC benefit plans**, the actuary should follow the guidance in section 3 to the extent practicable.

Some products combine **LTC** benefits with other insurance benefits. If the actuary determines that the guidance in this standard conflicts with the guidance in another ASOP regarding actuarial services for benefits other than **LTC** benefits, the guidance in the other ASOP will govern with respect to those other specific benefits. For example, the pricing of a product that offers both a death benefit and an **LTC** benefit written on an individual policy form would be within the scope of this ASOP. Nevertheless, to the extent that the guidance in this standard conflicts with guidance in other ASOPs regarding the pricing of the death benefit, the guidance in other ASOPs would govern the pricing of such death benefits.

This ASOP does not apply to actuaries when providing actuarial services related to Medicaid capitation rates that are within the scope of ASOP No. 49, *Medicaid Managed Care Capitation Rate Development and Certification*.

If the guidance in ASOP No. 3, *Continuing Care Retirement Communities*, related to performing actuarial services with respect to continuing care retirement communities conflicts with this ASOP, the actuary should follow the guidance in ASOP No. 3.

If the guidance in ASOP No. 32, *Social Insurance*, conflicts with this ASOP, the actuary should follow the guidance in ASOP No. 32.

If a conflict exists between this standard and applicable law (statutes, regulations, and other legally binding authority), the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law, or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should follow the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed on or after September 1, 2022.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Assisted Living Facility**—A facility that provides residents some assistance with activities of daily living. Residents have apartments, rooms, or shared dwellings and often share community living and dining areas with other residents. Usually meals, utilities, housekeeping, laundry, ambulation assistance, and personal care supervision are provided. Staff members may supervise the self-administration of medication.
- 2.2 **Home Care**—Care received at the patient’s home, such as part-time skilled nursing care, custodial care, speech therapy, physical or occupational therapy, part-time services of home health aides, or help from homemakers or chore workers.
- 2.3 **Insurer**—An entity that accepts the risk of financial losses or, for a specified time period, guarantees stated benefits upon the occurrence of specific contingent events, typically in exchange for a monetary consideration. For purposes of this standard, “**insurer**” also refers to an entity that sponsors **LTC benefit plans** that may be funded by sources other than premiums paid by the potential beneficiary.
- 2.4 **Long-Term Care (LTC)**—A wide range of health and social services, which may include adult day care, custodial care, **home care**, hospice care, intermediate nursing care, respite care, and skilled nursing care, but generally not care in a hospital. **Long-term care** is sometimes referred to as long-term services and supports (LTSS).

- 2.5 **Long-Term Care Benefit Plan (or LTC Benefit Plan)**—A policy, contract, or arrangement providing **LTC** benefits, either on a stand-alone basis or as part of a plan that provides other benefits as well (except where the **LTC** benefits are an immaterial feature). The plan may describe requirements for benefit eligibility, covered services, benefit amount, benefit payment duration (including short-term and long-term), maximum benefit amount, and other coverage features.
- 2.6 **Nonforfeiture Benefits**—Benefits that are available if premiums are discontinued.
- 2.7 **Nursing Home**—A residential facility which provides long-term nursing care to those who are unable to handle their own daily living needs. They are typically staffed by nurses with a physician on call, and care may range from custodial to skilled.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Coverage and Plan Features**—The actuary should take into account all pertinent provisions found in the applicable **LTC benefit plan**, including benefit eligibility, covered services, benefit amounts, benefit payment duration, and other coverage features that may significantly impact cost. While these provisions apply primarily to stand-alone individual, association-sponsored group, or employer-sponsored group **LTC benefit plans**, the actuary also should take into account material **LTC** provisions found in the following alternative **LTC** arrangements:
- a. the acceleration of benefits otherwise payable upon death under a life insurance product;
 - b. insurance products that provide ancillary **LTC** benefits;
 - c. **LTC** benefits provided by various administrative and risk-assuming programs, such as health maintenance organizations (HMOs), preferred provider organizations (PPOs), exclusive provider organizations (EPOs), government managed plans, and self-insured plans; and
 - d. **LTC** benefits provided for individuals living within retirement communities.
- 3.2 **Assumption Setting**—When developing actuarial assumptions, the actuary should take into account available experience data and reasonably foreseeable future changes. Many **LTC benefit plans** may remain in effect for many years, and some assumptions depend upon the behavior of covered individuals, providers of care, and society as a whole. As such, the actuary should recognize that assumptions derived from actual experience today may not be valid in the future. The actuary may include a margin or provision for adverse deviation (PAD) when setting assumptions and in such cases should include a margin or PAD that is appropriate for the intended purpose.

When setting, evaluating, or updating assumptions for which the actuary is taking responsibility, the actuary should consider using the following data or information:

- a. actual experience adjusted to current conditions where applicable, to the extent it is available, relevant, and sufficiently reliable;
- b. other relevant and sufficiently reliable experience, such as industry experience that is properly modified to reflect the circumstances, if actual experience is not available, relevant, or sufficiently reliable;
- c. future expectations or estimates, including those inherent in market data, when available and appropriate; and
- d. other relevant sources of data or information, including noninsured data as appropriate.

The actuary should develop assumptions in a manner consistent with how the assumptions will be applied. For example, a lapse assumption will be developed differently if it is to be applied to the total projected lives or to the projected active lives. The actuary should be familiar with applicable regulatory considerations as they relate to and govern assumption selection. The actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 25, *Credibility Procedures*, when selecting, reviewing, or evaluating data to develop assumptions.

3.2.1 Morbidity Assumptions—The actuary should develop morbidity assumptions consistent with all significant plan features, including the types of **LTC** benefits being provided, the types of optional benefits being provided, the plan’s benefit eligibility criteria, the claim adjudication process, the benefit amounts and benefit limits, and the exclusions.

In order to estimate morbidity, the actuary, where appropriate, should develop claim incidence rates, claim termination rates, costs of eligible benefits, and proportion of available benefits expected to be used. The actuary may need to exercise special care when projecting total claim costs rather than the components separately, as the total claim costs may be affected by factors such as discount rates, and as specific sensitivity tests on morbidity components may not be as reliable as when modeling the components separately. When developing morbidity assumptions, whether in total or in separate components, the actuary should take into account the following, as applicable:

- a. whether the claim cost elements vary by the type of care provider, such as **nursing home, assisted living facility, and home care**;
- b. participant behavior driven by available benefit choices and benefit limitations;

- c. the effect of induced demand for **LTC** services due to the presence of **LTC** benefits;
- d. the availability of benefits from other public and private programs such as Medicare, Medicaid, and Medicare supplement policies;
- e. the availability of **LTC** services;
- f. the effect of selection at the time of policyholder decision points (for example, decisions at the time of rate increase);
- g. premium rate classification of applicants;
- h. the underwriting processes, which may include the intensity of application questions, the marketing methods, the number and types of underwriting requirements, the number and definitions of underwriting classes, the effect of regulations on the underwriting process, and the experience of the underwriting personnel;
- i. the claims process, which may include the effect of regulations on the claim process, the experience of the claim personnel, processes for confirming eligibility (initial and ongoing), fraud detection, and the impact of reimbursement versus indemnity coverage;
- j. the potential for adverse selection when optional benefits are offered at any point in time; and
- k. interaction and correlation of assumptions, such as the effect of mortality on claim termination rates.

The actuary may also consider adjusting morbidity assumptions to reflect claimants' diagnoses.

3.2.2 **Mortality Assumptions**—When developing mortality assumptions, the actuary should take into account the effects of underwriting, classification of applicants, and selection on expected mortality experience and use a mortality table that appropriately reflects the expected mortality of the participants in the plan. The actuary should take into account that mortality differs between healthy and disabled lives. Also, the actuary should take into account whether deaths are fully reported and reasonably represented as a proportion of total decrements.

3.2.3 **Acceleration of Benefits under Life Insurance Contracts**—For **LTC** insurance benefits provided by the acceleration of benefits otherwise payable upon death under a life insurance product, the actuary should ensure that assumptions concerning the amount and timing of payments are determined consistently for the contingencies of both mortality and **LTC** morbidity.

- 3.2.4 **Voluntary Termination (Lapse) Assumptions**—When developing voluntary termination (lapse) assumptions, the actuary should take into account the following:
- a. product features, premium mode, premium payment method, and **nonforfeiture benefit**;
 - b. reasonably available information regarding the marketing method, the motivations for purchasing and continuing coverage, product and premium competitiveness, and the quality of service of the entity providing the benefits;
 - c. changes in rating agency outlooks or ratings;
 - d. any effect of rate changes or offering reduced benefits on voluntary lapses; and
 - e. whether lapses are reasonably represented as a proportion of total decrements.
- 3.2.5 **Operating Expense Assumptions**—When developing operating expense assumptions, the actuary should consider reflecting the entity business plan and the cost of product development, marketing, producer compensation, regulatory compliance, underwriting, benefit administration, care management, and other **LTC benefit plan** administration, as applicable.
- 3.2.6 **Tax Assumptions**—When developing tax assumptions, the actuary should reflect the tax reserve basis of the **LTC benefit plan** and the premium, income, or any other applicable tax rates of the entity.
- 3.2.7 **Investment Return Assumptions**—When developing investment return assumptions, the actuary should take into account investment assumptions and economic market assumptions that reflect real world or market consistent theory, where appropriate, and that include assumptions for reinvestment, asset default, asset underperformance, and investment expenses. Where appropriate, the actuary also should take into account the assets of the **insurer** and the **insurer's** investment strategy and refer to ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*.
- 3.2.8 **Mix-of-Business Assumptions**—The actuary should reflect the characteristics of the anticipated distribution of business such as age, gender, marital status, underwriting classes, distribution system, and **LTC benefit plan** options (such as benefit period, elimination period, inflation option, daily benefit, and other coverage options).
- 3.2.9 **Change-Over-Time Assumptions**—When developing the assumptions, the actuary also should consider identifying and reflecting assumptions for which experience may be likely to change over the term of the **LTC benefit plan**. Though not necessarily limited to these factors, changes in the experience may be attributable

to changes in health of the participants, changes in participant behavior, changes in care management, changes in sites of care, changes in environment, and changes in lifestyle.

- 3.2.10 **Alternative LTC Arrangements**—The actuary should consider using assumptions for the alternative **LTC** arrangements described in section 3.1(a)-(d) that are different from those used for stand-alone insured **LTC benefit plans**.

- 3.2.11 **Sensitivity Testing**—Prior to the finalization of assumptions, the actuary should perform sensitivity testing of reasonable variations in assumptions, and reasonable correlations of assumptions. The actuary should expand the range of sensitivity testing when the data supporting the assumptions have limited credibility. Also, the actuary should consider testing the projections under stressed assumptions. The actuary should consider including appropriate margin or PAD to recognize the results of the sensitivity testing.

- 3.3 **Premium Rate Recommendations**—When recommending an initial premium rate schedule, the actuary should use methods and assumptions conforming to applicable regulatory requirements such that the premium rate schedule has a reasonable likelihood of being sufficient without future rate adjustments to the recommended schedule.

When developing recommendations regarding revisions to existing premium rate schedules, the actuary should review any material variations in experience and consider reflecting changes in expectations that would make changes in premium rates for in-force business advisable, subject to regulatory review.

Premium rate schedules also may include fees, taxes, surcharges, or other revenue-generating devices.

- 3.4 **Reserve Determination and Asset Adequacy Analysis**—In calculating reserves, the actuary should use appropriate methods and assumptions taking into account the benefit features of the particular **LTC benefit plan** in question, including any optional benefits.

Reserves typically required by and appropriate for **LTC benefit plans** are premium reserves, contract reserves, and claim reserves for both reported claims and incurred but not reported claims.

In setting statutory reserves, the actuary should be familiar with applicable sections of the following: the *Standard Valuation Law*, the *Valuation Manual*, Actuarial Guideline LI, and asset adequacy analysis standards.

Because **LTC benefit plans** are often long-term in nature, cash flow testing is a potentially important part of the management of an **LTC benefit plan**. The degree of rigor in analyzing an **LTC benefit plan** has increasing importance if the **LTC benefit plan** is a more significant portion of the sponsoring entity's business. Therefore, when performing asset adequacy analyses, the actuary should refer to ASOP No. 7 and ASOP No. 22, *Statements*

of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities.

To the extent **LTC benefit plans** are included in a statement of actuarial opinion, ASOP Nos. 22, 28, *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities*, and 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, may apply.

- 3.5 **Experience Monitoring**—When practicable, and when emerging experience may be material to the sponsoring entity, the actuary should inform the sponsoring entity that experience data should be collected in a manner that permits an actuary to compare prior assumptions with emerging experience and assess the implications of any significant differences.

To the extent that industry or general population data were used in determining assumptions for estimating benefit costs or establishing reserves, an actuary reviewing **LTC benefit plan** experience should monitor for significant changes that may have emerged in such data. To the extent the actuary plans to rely upon the data when setting assumptions, as described in section 3.2, the actuary should take into account emerging experience.

- 3.6 **Reliance on Data, Other Information, or a Model Supplied by Others**—When relying on data, other information, or a model supplied by others, the actuary should refer to ASOP No. 23, ASOP No. 41, *Actuarial Communications*, and ASOP No. 56, *Modeling*, for guidance.

- 3.7 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing documentation, the actuary should prepare documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 7, 22, 23, 25, 28, 36, 41, and 56. In addition, the actuary should disclose the following in such actuarial reports, if applicable:
- a. characteristics of the product including optional benefits and guarantees (see section 3.1);

- b. key assumptions and the manner in which the actuary established those assumptions to reflect expected future experience (see section 3.2);
 - c. the range of sensitivity tests evaluated, and any subsequent margin as a result of sensitivity testing (see section 3.2.11);
 - d. the premium rate recommendation and support for the recommendation, including a description of any provisions for adverse deviations (see section 3.3);
 - e. a description of the method and assumptions used in calculating reserves, as well as a description of any method used to test reserve adequacy (see section 3.4); and
 - f. the need to collect and monitor experience data (see section 3.5).
- 4.2 **Additional Disclosures in an Actuarial Report**—The actuary also should include disclosures in an actuarial report in accordance with ASOP No. 41 for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law;
 - b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary’s professional judgment, the actuary has deviated materially from the guidance of this ASOP.
- 4.3 **Confidential Information**—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

Appendix 1-

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

The utilization of long-term care (LTC) services has been increasing rapidly, and that growth is expected to continue in the decades ahead. Paying for these services is expected to be a challenge for society for the foreseeable future. Many of the funding methods in use involve long-term contractual commitments and estimation of expected costs many years in the future—work that requires actuarial analysis and training.

Estimating future results for LTC is a difficult process. Some of the reasons that actuarial activity in LTC insurance is such a challenge include the following:

1. A limited amount of homogenous data is available, especially on insured lives at older ages and later policy durations. While the Society of Actuaries (SOA) produced a somewhat credible stand-alone LTC insurance experience study in 2015, it was based on experience through only 2011.
2. LTC insurance coverage has been redirected toward combination products in recent years. The SOA experience study may be different than experience expected from the combination market.
3. New financing approaches are regularly being introduced, such as the funding arrangements for LTC services being provided through the Washington State public program, through some states considering similar or “catastrophic” LTC programs, and by the continuing care retirement community model being applied in the home care setting. Even traditional stand-alone policies have scaled back their benefits with smaller lifetime maximums, daily benefit maximums, and automatic benefit increases to reduce the company’s risk exposure. These approaches might have quite different experience than traditional stand-alone LTC insurance benefits.
4. Underwriting, marketing, distribution, and claim payment practices can be quite dissimilar under different LTC insurance financing plans, producing diverse results. This compounds the difficulty of developing homogeneous experience data from which to estimate future activity.
5. Changes in the LTC regulatory, medical, or insurance environment or in consumer behavior could alter the expectations of benefits paid by a long-term care benefit plan. The following are examples of such possible changes:

- a. The use of LTC services may tend to change when such services are provided in an insured environment with increasing availability of public LTC coverage.
- b. Medical advances might reduce LTC insurance costs by preventing or curing maladies requiring LTC services (for example, a cure for Alzheimer's disease). However, medical advances could also increase the life expectancy of impaired persons or enable some persons to develop an impaired condition who otherwise would have died.
- c. Current attitudes associated with nursing home care, assisted living facility care, and home health care might change over time. For example, the number of deaths in LTC facilities that were attributed to COVID-19 may orient more people toward care in the home, altering the average utilization.
- d. Changes in the family structure in society may reduce the number of family members available to care for the impaired, increasing the need for paid LTC services.
- e. Changes may occur in government payment for long-term care, which could impact payment for LTC services under private insurance. Such governmental changes could also affect LTC utilization patterns or the rules relating to taxes on LTC insurance premiums and benefits.
- f. New LTC services may be developed and the availability of existing services may increase substantially. As new services become available, they may cause changes in consumers' use of previously existing care services, as well as changes in total service utilization.
- g. Impact of rate increases continue to change the in-force mix and policyholder behavior.

Some regulators and interested parties believe that standards or controls beyond those for other coverages are needed to protect consumers in the LTC insurance field. This is partly because most LTC users are senior citizens, who are perceived as having few financial options.

Further, many LTC insurance financing mechanisms involve financial commitments of very long duration. Many LTC insurance policies are guaranteed renewable for the life of the insured. It is also a product characterized by an extremely high degree of advance funding, with most of the claim dollars paid out long after the policy is put into effect.

Current Practices

Actuaries apply diverse methods to measure the cost of a benefit design, devise a funding system, and evaluate liabilities. A basic part of an actuary's work in this field involves taking into consideration the pertinent provisions in the LTC benefit plan, such as the following:

1. Benefit Eligibility (Definition of Insured Event)—In order to qualify for benefits, an insured person may have to satisfy an elimination period and must provide satisfactory evidence of benefit eligibility. Long-term care benefit plans may define benefit eligibility in several ways. The most common criteria for benefit eligibility are functional or cognitive impairment (as defined for tax qualified plans in an LTC insurance plan) and sometimes medical necessity. Benefit eligibility also frequently depends on the use of covered services or services on a day for which the benefit is payable.
2. Covered Services—An LTC benefit plan may provide coverage for only a limited set of LTC services or a very broad set. A particular plan might cover only nursing home care, or only home care, or could cover a combination of both. Any number of additional types of care, such as assisted living facility care, adult day care, and respite care, may also be covered. When coverage is included for different types of services, the coverage can either be integrated or non-integrated. One example of integrated benefits is a single lifetime benefit maximum that may be utilized for any combination of nursing home care or home care.
3. Benefit Amount—The amount payable for a given service, or for a given day of care, may either be a fixed contractual amount, such as \$100 per day of eligibility, or may be related to the actual cost of services provided that day. In the latter case, the reimbursement may be either the full cost of services or a percentage of the cost, and it may be capped at a particular daily maximum. If there is a daily maximum, it may vary depending on the type of service. The fixed daily benefit amount or maximum daily benefit may be increased under an inflation protection provision.
4. Benefit Payment Duration—There are different ways in which benefit length and frequency may be structured for payment. Some examples are as follows:
 - a. Benefit Period of Consecutive Days—The maximum benefit period is defined as a stated number of days or years, and benefits are payable during a continuous period of time of that length, starting from the first day of eligibility. Under this approach, days without covered services may not result in a benefit payment but do not extend the benefit period.
 - b. Benefit Days—The maximum benefit period is defined as a stated number of days or years, and benefits are payable for days on which the insured person meets the eligibility requirements, until the maximum number of days or benefits have been paid. Under this approach, any day for which the insured is ineligible for benefits does not count as part of the benefit period, and the benefit period is thereby extended.
 - c. Maximum Benefit—The maximum benefit is defined in terms of a total dollar amount, and benefits are payable until that amount has been paid. The total dollar amount may be increased under an inflation protection provision.

5. Other Coverage Features That May Significantly Impact Cost—Some examples of additional features that may be found in LTC insurance plans are the following:
- a. an alternative plan of care provision, under which services not expressly covered under the insurance contract may become covered, usually when viewed as an appropriate substitute for a covered service;
 - b. a shortened benefit period provision, i.e., a type of nonforfeiture benefit under which the insured has paid-up coverage with a benefit period whose length is determined by the nonforfeiture benefit value that has accrued;
 - c. a restoration of benefits provision, under which an insured who has used a portion of the maximum benefit can have the full benefit restored after a stated minimum time period during which the insured person either did not use or was ineligible for benefits; and
 - d. a shared benefit maximum provision for spouses.

Apart from the actual provisions in the LTC insurance plan, numerous forms of individual LTC insurance are being offered, ranging from stand-alone nursing home or home care coverage to combination or integrated products that cover a broad range of services in many locations. Long-term care insurance plans are available on both tax-qualified and nontax-qualified bases. There are also LTC insurance riders to life, disability, and annuity products that can enhance benefits, accelerate benefits, waive surrender charges, guarantee purchase rights, or offer conversion options.

The group market consists of both insured and self-insured plans. In either instance, the employer or other sponsor may fund none, a portion, or all of the required contribution. Group coverages also can be extended to eligible groups such as association members, affinity groups, and congregate community residents.

Furthermore, some states are expressing interest in public LTC programs. Washington State implemented a payroll tax funded program for up to \$36,500 of benefits for eligible residents who have the inability to perform at least three activities of daily living. From time to time, states consider covering care that exceeds a specified number of months, for example after thirty-six months of care is required.

The Medicaid program is a healthcare program jointly funded by the federal and state governments. The Medicaid programs are managed by the state government with oversight by the Center for Medicare and Medicaid Services. The Medicaid program provides healthcare services to low-income individuals and families, individuals with disabilities, and the elderly. The Medicaid program provides a wide array of coverage, including hospital, physician, pharmacy, and long-term services and supports. Eligibility standards for the Medicaid program depend on a number of requirements including financial requirements associated with assets and income. Long-term services and supports for the Medicaid program include nursing home,

custodial care, home health care, adult day services, respite care services, and other home and community-based services.

Definitions of Selected Terms

Activities of Daily Living (ADLs)—Basic functions used as measurement standards to determine levels of personal functioning capacity. Typical ADLs include bathing, continence, dressing, eating, toileting, and transferring (between bed and chair or wheelchair).

Adult Day Care—A program of social and health-related services designed to meet the needs of functionally or cognitively impaired adults, provided in a non-residential group setting other than the adult client's home.

Cognitive Impairment—A deficiency in a person's short- or long-term memory; orientation with respect to person, place, and time; deductive or abstract reasoning; or judgment as it relates to safety awareness.

Continuing Care Retirement Community (CCRC)—A residential facility for retired people that provides stated housekeeping, social, and health care services in return for some combination of an advance fee, periodic fees, and additional fees.

Custodial Care—Care to help a person perform ADLs and other routine activities, also known as *personal care*. It is usually provided by people without professional medical skills. It is less intensive or complicated than skilled or intermediate nursing care and can be provided in many settings, including nursing homes, assisted living facilities, adult day care centers, or at home.

Functional Impairment—The inability to perform a specified number of ADLs.

Guaranteed Renewable Contract—A contract that provides the insured has the right to continue the insurance in force for a specified period by the timely payment of premiums and that the insurer may not unilaterally change the contract during that specified period, except that the insurer may revise premium rates on a class basis.

Hospice Care—A program that provides health care to a terminally ill person and counseling for that person and his or her family. Hospice care can be offered in a hospice setting established for this single purpose, a nursing home, or at home, where nurses and social workers can visit the person regularly.

Instrumental Activities of Daily Living (IADLs)—Functions, more complex than ADLs, that are used as measurement standards of functioning capacity; examples include preparing meals, managing medications, housekeeping, telephoning, shopping, and managing finances.

Intermediate Nursing Care—Care needed for persons with stable conditions that require daily, but not 24-hour, nursing supervision. Intermediate nursing care is less specialized than skilled nursing care and often involves more custodial care.

Respite Care—Temporary care for frail or impaired persons that allows volunteers to have a rest from care giving.

Skilled Nursing Care—Care provided by skilled medical personnel, such as registered nurses or professional therapists, but generally not care in a hospital.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the proposed revision of ASOP No. 18, *Long-Term Care*, was issued in March 2021 with a comment deadline of September 1, 2021. Four comment letters were received, some of which were submitted on behalf of multiple commentators, such as firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 18 Task Force carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the ASOP No. 18 Task Force and the ASB Health Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 18 Task Force, the ASB Health Committee, and the ASB. Also, the section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final ASOP.

GENERAL COMMENTS	
Comments	One commentator felt the transmittal memorandum should have stated that there has been a notable amount of rewording and reordering of material in this ASOP, including additions reflecting developments in LTC practice over the past twenty to thirty years. The commentator felt that the changes went beyond “improv[ing] readability, clarity or consistency.”
Response	The reviewers agree and made reference to the expansion of the ASOP to hybrid products, public programs, and long-range financial projections of Medicaid programs.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested deleting “and public programs” in section 1.1 due to potential conflict with ASOP No. 32, <i>Social Insurance</i> .
Response	The reviewers disagree with deleting “public programs” from the purpose and scope of this ASOP. However, the reviewers added clarifying language regarding potential conflicts with ASOP No. 32 in section 1.2.
Section 1.2, Scope	
Comment	One commentator suggested that a reviewing actuary should “follow” rather than “use” the guidance.
Response	The reviewers agree and made the change.
Comment	Several commentators suggested clarifying language about applicability to Medicaid programs and long-range financial projections.
Response	The reviewers agree and modified the scope to provide further clarity, including an exclusion for actuarial services provided under ASOP No. 49, <i>Medicaid Managed Care Capitation Rate Development and Certification</i> .

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2.2 (now 3.2.1), Morbidity Assumptions	
Comment	One commentator suggested that morbidity assumptions should reflect claimants' diagnoses.
Response	The reviewers modified the language in response to this comment.
Section 3.2.5 (now 3.2.4), Voluntary Termination (Lapse) Assumptions	
Comment	One commentator suggested deleting "rating agency rating."
Response	The reviewers modified the language to clarify the applicability of rating agency outlooks and ratings.
Section 3.2.6 (now 3.2.5), Operating Expense Assumptions	
Comment	One commentator suggested specifically identifying "policy and claims administration."
Response	The reviewers modified the language accordingly.
Section 3.3, Premium Rate Recommendations (Including Fees or Other Revenue-Generating Devices)	
Comment	One commentator suggested including "fees, taxes, surcharges, contributions."
Response	The reviewers modified the language in response to this comment.
Section 3.4, Reserve Determination and Asset Adequacy Analysis	
Comment	One commentator suggested adding a reference to ASOP No. 28, <i>Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities</i> .
Response	The reviewers agree, made the change, and also added a reference to ASOP No. 36, <i>Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves</i> .



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 19**

**Appraisals of
Casualty, Health, and Life Insurance Businesses**

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 19 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2005
Updated for Deviation Language Effective May 1, 2011**

(Doc. No. 137)

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June 2005

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board, and Other Persons Interested in Appraisals of Value of Casualty, Health, and Life Insurance Businesses

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 19

This booklet contains the final version of the revision of ASOP No. 19, *Appraisals of Casualty, Health, and Life Insurance Businesses*.

Background

The ASB originally adopted ASOP No. 19, then titled *Actuarial Appraisals*, in 1991. The former ASOP was prepared by the Actuarial Appraisal Task Force of the Life Committee of the ASB. The current task force has prepared this revision of ASOP No. 19 to be consistent with the current ASOP format and to reflect current, generally accepted actuarial practices with respect to actuarial appraisals and other appraisals.

Exposure Draft

The exposure draft of this ASOP was issued in June 2004, with a comment deadline of November 30, 2004. Thirteen comment letters were received. The task force carefully considered all comments received and made clarifying changes to the language in some sections. For a summary of the substantive issues contained in the exposure draft comment letters and the task force's responses, please see appendix 2.

The most significant change from the exposure draft is that the task force revised section 4.3, which deals with the use of the term "actuarial appraisal" in reference to an appraisal performed by an actuary. The revised section 4.3 requires that an actuary not use the term "actuarial appraisal" to refer to an appraisal that does not meet the definition of an actuarial appraisal contained in the standard. Section 4.3 in the exposure draft required that a report on an appraisal that did not meet the definition contain a statement that it was not an actuarial appraisal.

The task force thanks everyone who took the time to contribute comments on the exposure draft.

The ASB voted in June 2005 to adopt this standard.

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Task Force to Revise ASOP No. 19

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ACTUARIAL STANDARD OF PRACTICE NO. 19

APPRAISALS OF CASUALTY, HEALTH, AND LIFE INSURANCE BUSINESSES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to appraisals of casualty, health, and life insurance businesses.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services with respect to appraisals of casualty, health, and life insurance businesses, as defined in section 2.7.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for all appraisals of casualty, health, and life insurance businesses initiated on or after November 1, 2005.

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Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Appraisal**—An appraisal of an insurance business presenting a set of actuarial appraisal values. A set of actuarial appraisal values is based on a range of discount rates or a range of assumption sets but may in certain circumstances present a single unique value for the business.
- 2.2 **Actuarial Appraisal Value**—The present value, calculated as of the appraisal date, of projected distributable earnings of an insurance business where the distributable earnings are based on a set of assumptions.
- 2.3 **Appraisal**—An assessment of the value of an insurance business including, but not limited to, an actuarial appraisal.
- 2.4 **Appraisal Date**—The date as of which an appraisal value is assessed.
- 2.5 **Discount Rate**—The rate used to discount projected earnings to determine a present value used in an appraisal.
- 2.6 **Distributable Earnings**—Amounts that an insurance business can distribute while retaining the level of capital required to support its ongoing operations. Distributable earnings consist of earnings of an insurance business computed using the applicable regulatory accounting basis, adjusted to allow for the injection or release of regulatory capital and surplus, in recognition of appropriate capital and surplus levels needed to support ongoing operations. A regulatory accounting basis is the basis required by the insurance supervisory authority in a particular jurisdiction to be used for financial statement filings by insurance companies and similar entities in that jurisdiction.
- 2.7 **Insurance Business**—An enterprise involved in assuming insurance risk, such as one or any combination of the following: an insurance company or health maintenance organization; a collection of policies or contracts in-force that cover insurance risk; and a distribution system that sells such policies or contracts.
- 2.8 **Intended Audience**—The persons to whom an appraisal report is directed and with whom the actuary, after discussion with the principal, intends to communicate. Unless otherwise specifically agreed, the principal is always a member of the intended audience. In addition, other persons or organizations, such as investors or regulators, may be designated by the principal, with consent of the actuary, as members of the intended audience.

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- 2.9 **Other User**—Any user of an appraisal report who is not a principal or member of the intended audience.
- 2.10 **Principal**—The actuary’s client or employer.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—When preparing appraisals of life, health, or casualty insurance businesses, the actuary may use a variety of methods. Often, an actuarial appraisal, as defined in section 2.1, will be prepared. Other methods may also be used that may or may not involve actuarial techniques.
- 3.2 **Projected Earnings**—When performing an appraisal that is based on discounting projected earnings, the actuary should project earnings using a model of future (a) cash flows related to such items as premiums, investments, benefit or claim payments, and expenses; (b) accrual amounts related to these items; and (c) other items such as reserves for future policy benefits. The actuary should project cash flows in accordance with ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*.

In the case of an actuarial appraisal, the actuary should project distributable earnings.

- 3.3 **Setting Assumptions**—When setting assumptions for use in an appraisal, the actuary should consider the historical experience of the insurance business, adjusted to reflect known material changes in the environment and identifiable trends to the extent such information is available. When experience of the business is unavailable or insufficient to provide a credible basis on which to develop assumptions, the actuary should consider other information sources in setting assumptions. Other information sources may include the pricing or reserving practices applicable to the insurance business and the available experience of other insurance businesses with comparable policies or contracts, markets, and operating environment.

In developing assumptions for which the actuary believes additional expertise is needed, the actuary should obtain necessary input from persons possessing the relevant knowledge or expertise, and should give due weight to their input.

When setting assumptions for use in an appraisal, the actuary should take reasonable steps to ensure that each set of assumptions used is internally consistent.

- 3.4 **Discount Rate**—If the appraisal is based on the discounted value of projected earnings, the actuary should consider displaying appraisal values using several discount rates.

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- 3.5 **Applicability of Appraisal**—The intended audiences for appraisals may include parties with different interests and perspectives (for example, management, investors, regulators, or sellers). The actuary should consider the legitimate circumstances, needs, and strategies of the intended audience, to the extent these are known by the actuary, in setting assumptions, choosing discount rates, and choosing what sensitivity tests to perform.
- 3.6 **Treatment of Assets**—If the appraisal involves assumptions about future returns on assets, the actuary should consider the composition of the projected asset portfolio in terms of type, quality, and maturity. The projected earnings rate of the assets should be consistent with the valuation of assets (for example, book or market). The actuary should consider the legitimate circumstances, needs, and strategies of the intended audience, to the extent these are known by the actuary, in making an assumption as to investment strategy.
- 3.7 **Modeling and Model Validation**—When the appraisal is based on projected earnings, the actuary should calculate such earnings using a model of the insurance business appropriate to the situation. The actuary should perform validation tests to determine whether the model reasonably reproduces relevant items of the balance sheet and income statements of the insurance business. When the appraisal is based on stochastic projections, the actuary should consider whether the scenarios used are appropriate to the situation.
- 3.8 **Sensitivity Testing**—When appropriate and practical in the actuary's judgment, the actuary should address the sensitivities of the appraisal value to changes in key assumptions. The actuary should consider the intended purpose and use of the appraisal and whether the results reflect a reasonable range of variation in the key assumptions, consistent with that intended purpose and use, when determining whether these sensitivities have been appropriately addressed.
- 3.9 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.10 **Documentation**—The actuary should create records and other appropriate documentation supporting an appraisal and, to the extent practicable, should take reasonable steps to ensure that this documentation will be retained for a reasonable period of time consistent with any statutory, regulatory or other requirements, any confidentiality or nondisclosure agreement, and company policy. The actuary need not retain the documentation personally; for example, the actuary's principal may retain it. Such documentation should identify the data, assumptions, and methods used by the actuary with sufficient detail that another actuary qualified in the same practice area could evaluate the reasonableness of the actuary's work.

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Section 4. Communications and Disclosures

- 4.1 **Appraisal Report**—When issuing communications under this standard, the actuary should refer to ASOP No. 23 and ASOP No. 41, *Actuarial Communications*. In addition, when preparing a report on an appraisal, the actuary should disclose the following items to the extent they are relevant to the work performed by the actuary:
- a. the scope of the assignment, including the insurance businesses being valued, and any limitations as to the availability of data;
 - b. the actuary's principal;
 - c. the duty, if any, that the actuary is assuming with respect to any user of the report other than the actuary's principal;
 - d. a description of the intended use of the report;
 - e. a description of the corporate organizational structure of the business, its distribution methods, lines of business, and products;
 - f. the appraisal date;
 - g. an appraisal value or range of appraisal values (if a single unique appraisal value is presented, an explanation of why this is appropriate);
 - h. the methodology used to develop the appraisal, reasons for the choice of methodology, and whether a financial projection is part of the methodology;
 - i. the projection model, the accounting basis used, and other key items included in the analysis;
 - j. the results of the model validation;
 - k. a discussion of the level of capital reflected in the appraisal and the basis on which the level was determined;
 - l. the assumptions, described in sufficient detail that another actuary qualified in the same practice area could evaluate their reasonableness;
 - m. the source of any assumption selected by someone other than the actuary;
 - n. the extent to which taxes have been considered and on what basis;

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- o. any sensitivity testing results deemed material by the actuary;
 - p. the source and extent of reliance on information supplied by others;
 - q. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - r. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - s. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.2 Variation of Results—When the actuary issues a report on an appraisal, the report should state that actual results can and will vary from projected results used to calculate appraisal values due to deviations of actual from assumed experience.
- 4.3 Appropriate Use of the Term “Actuarial Appraisal”—The actuary should not refer to an appraisal as an actuarial appraisal in any actuarial communication unless the appraisal meets the definition of an actuarial appraisal in section 2.1.
- 4.4 No Obligation to Communicate with Other Users—Nothing in this standard creates an obligation for the actuary to communicate with any person or persons other than the intended audience.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Actuaries perform appraisals for a number of purposes and for a variety of users, including sellers, buyers, management, and regulators. Actuaries perform appraisals of insurance businesses of various types using a variety of methods. In some cases, appraisals performed by actuaries show values that are discounted present values of earnings, distributable earnings, or other amounts. In other cases, appraisals performed by actuaries show values based on “rules of thumb” applied to reserve balances, premiums, or other amounts, or on multiples of book value or earnings on various accounting bases.

An actuarial appraisal is a specific type of appraisal. The key distinguishing feature of an actuarial appraisal is the projection of the future stream of distributable earnings attributable to the evaluated business based on the applicable regulatory accounting basis. This stream of earnings includes the runoff of claim liabilities and other liabilities carried on the balance sheet at the valuation date as projected using actuarial assumptions relating to items such as mortality, persistency, expenses, and investment return. The projections may be done for existing and new business separately or in combination. The projected earnings are then discounted at the selected discount rate(s) to derive the actuarial appraisal value.

Current Practices

In performing an appraisal of an insurance business, the actuary has a myriad of bases for assumptions from which to choose in developing projections of future earnings and ultimately deriving an appraisal value or range of appraisal values for the business. Of course, actual experience can and will vary from the assumptions selected. In actual practice, appraisal values are sometimes based on extensive analysis of confidential or proprietary information, from which thorough testing of key assumptions can be performed. In other instances, actuarial appraisals are based on more limited analysis or data because of materiality considerations or time limitations, or because internal company data are unavailable and only publicly available information can be used.

Appraisals are commonly performed in connection with the sale of an insurance business. Buyers and sellers of insurance businesses often use such appraisals to help them determine the price to be paid or received, although the value of an insurance business resulting from a negotiated

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transaction may differ materially from the value or range of values presented in an appraisal. Appraisals are sometimes used to measure fair values of an insurance business for purposes of allocating purchase price in a business combination under Statement of Financial Accounting Standards (SFAS) No. 141 or in testing impairment of identifiable intangible assets or goodwill of an insurance business under SFAS No. 142. Appraisals can also come into play in calculations of embedded values of insurance businesses for purposes of reporting financial results in an embedded value framework. It should be noted that in contrast to actuarial appraisal values, the embedded value of an insurance business typically does not include future business value.

The discount rate used to discount future earnings is a key element of the actuarial appraisal analysis and may be an element of other types of appraisal. This rate impacts both the present value of future earnings and the cost of capital. Often one discount rate is selected for the entire actuarial appraisal. However, because risks vary by product line and between in-force and new business, discount rates sometimes vary similarly, and multiple discount rates may be used in the actuarial appraisal.

Generally, regulatory accounting determines the earnings available to the owner of an insurance business, which is why actuarial appraisals are based on regulatory earnings. Future earnings based on generally accepted accounting principles (GAAP) or other accounting bases may also be relevant to the value of an insurance business. However, appraisals of value based on such other accounting bases are not considered actuarial appraisals.

The present value of distributable earnings in an actuarial appraisal is often expressed as (a) adjusted net worth; plus (b) existing business value; plus (c) future business value; and less (d) cost of capital. For certain types of business (for example, most property/casualty business), existing and future business components are frequently combined into a single component. The sum of (a) through (d) is mathematically equivalent to the present value of all distributable earnings, inclusive of any initial surplus releases or infusions at the inception of the earnings projection period, and inclusive of the release of the all capital and surplus at the conclusion of the earnings projection period.

The adjusted net worth component includes regulatory capital and surplus; any regulatory liabilities that in essence represent allocations of surplus (for example, asset valuation reserve, regulatory portions of casualty Schedule P reserves); any regulatory non-admitted assets that have realizable value; the difference between market value and book value of assets in support of adjusted net worth, and other items impacting value that are not reflected elsewhere (for example, reserve shortfalls or surplus notes).

The existing business value component equals the present value of future earnings attributable to business inforce on the appraisal date, including any remaining effects of coverage previously provided, such as the runoff of claim liabilities.

The future business value component equals the present value of future earnings attributable to business issued or acquired after the appraisal date. Under some circumstances, actuarial

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appraisal values do not include a future business value component. Sometimes it is not practical to split earnings between existing business and future business, and in that case future earnings are often projected for the combined existing and future business.

The sum of the above components is often adjusted for the cost of capital so that it is equivalent to a present value of distributable earnings. The cost of capital reflects the fact that capital and surplus needed to be retained in the insurance business are not available as distributable earnings. The cost of retaining capital is often calculated based upon the differential between the after tax rate of investment return expected to be earned on retained capital and the discount rate. The amount of retained capital will depend on the level of capital believed necessary for the risks inherent in the business and to achieve desired ratings from the various rating agencies. Because different users of the actuarial appraisal will have different views on the appropriate level of retained capital, it is often useful to calculate and illustrate the cost of capital separately from the first three components of the actuarial appraisal value.

In recent years, the use of stochastic modeling approaches in performing actuarial appraisals has become more common. Stochastic methodology has been used for assumptions such as investment returns, mortality rates, and claim frequency and severity.

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Appendix 2

Comments on the Exposure Draft and Task Force Responses

The exposure draft of this proposed actuarial standard of practice (ASOP), titled *Appraisals of Casualty, Health, and Life Insurance Businesses*, was issued in June 2004, with a comment deadline of November 30, 2004. Thirteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force to Revise ASOP No. 19 carefully considered all comments received. Summarized below are the significant issues and questions contained in the comment letters and the task force’s responses. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	Several commentators questioned the applicability of the standard to property/casualty appraisals. Other commentators stated the scope was appropriate.
Response	The task force believed that the scope of the standard was appropriate as written. In reaching this conclusion, the task force noted that property/casualty appraisals were included in the scope of the existing ASOP No. 19, and that at the request of the ASB, a property/casualty actuary actively participated in the drafting of the standard. In addition, after receiving these comments, the task force consulted several property/casualty actuaries, including the Casualty Practice Council, and the responses indicated that the scope was appropriate.
Comment	One commentator questioned why the ASOP was assigned to the ASB Life Committee.
Response	The ASB assigns ASOPs that might apply to more than one practice area, but not necessarily to all practice areas, to the operating committee that it deems most appropriate. The ASB usually bases this determination on which committee represents the practice area that would be most affected by the ASOP or has the most history with the development or periodic review of the ASOP. In this case, the ASB assigned ASOP No. 19 to the ASB Life Committee but requested health and property/casualty members be recruited for the task force.
Comment	One commentator suggested that “embedded value” be defined in the standard.
Response	The task force added a definition of “embedded value” in appendix 1.
The task force implemented editorial changes in addition to those addressed specifically below if they enhanced clarity and did not alter the intent of the section.	
SECTION 2. DEFINITIONS	
Section 2.1, Actuarial Appraisal	
Comment	One commentator suggested that the definition should mention that distributable earnings projections should reflect the applicable regulatory accounting basis.
Response	The task force believed that section 2.7 (now 2.6) sufficiently covered this concern.

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Comment	One commentator was concerned that the specific definition of an actuarial appraisal in the standard could put U.S. actuaries at a disadvantage when asked to perform an appraisal of a non-U.S. entity.
Response	The task force believed that, while this could be the case, it was important to have a clear definition of this term.
Section 2.7, Distributable Earnings (now 2.6)	
Comment	One commentator urged that the standard provide guidance as to what is the level of “appropriate capital.”
Response	The approaches to determining the level of required capital continue to evolve, and the appropriate level of capital has varied over time with the evolution of regulatory accounting and will likely vary in the future. For these reasons, the task force believed that the determination of the appropriate level of capital should not be addressed in the standard. Note, however, that Section 4.1(k) requires disclosure of the level of capital and the rationale for that level.
Comment	One commentator suggested that this definition did not correctly describe the recognition of capital flows in the determination of distributable earnings.
Response	The task force agreed and revised the definition to reflect more clearly the recognition of capital flows.
Section 2.8, Insurance Entity (now 2.7, Insurance Business)	
Comment	Several commentators believed that the term “insurance entity” could be misunderstood to refer to a legal entity and that a more descriptive term such as “insurance business” would better convey the intended meaning.
Response	The task force agreed and changed the defined term to “insurance business.”
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Introduction	
Comment	One commentator suggested the second sentence be revised. The commentator acknowledged that in some types of work, particularly certain property/casualty work, it is not typical that an actuarial appraisal will be done.
Response	The task force agreed and changed the word “typically” to “often.”
Section 3.2, Projected Earnings	
Comment	Several commentators suggested the definition of projected earnings should be clarified.
Response	The task force explicitly included the terms “investment earnings” and “claim payments” in the discussion of cash flow and accrual amounts to clarify the definition.
Section 3.4, Discount Rate	
Comment	One commentator believed that this section left the impression that an actuarial appraisal should be performed based on a single deterministic set of assumptions, as opposed to a stochastic approach. The commentator believed that this was not an accurate reflection of current trends in actuarial practice.
Response	The task force agreed that stochastic approaches to performing actuarial appraisals are an important part of current practice in this area, revised section 3.7 to include review of stochastic scenarios, and added a section to appendix 1 that discusses stochastic methods applied to appraisals.
Section 3.5, Applicability of Appraisal	
Comment	One commentator suggested that reference to sensitivity testing be included.
Response	The task force agreed and added wording to this section to address sensitivity testing.

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Comment	One commentator asked if the actuary should consider the perspective of the entity initiating the appraisal.
Response	The task force believes that this has been addressed, in that section 3.5 states the actuary should consider the circumstances, needs, and strategies of the intended audience for the appraisal.
Section 3.6, Treatment of Assets	
Comment	One commentator suggested deleting the phrase “that support related liabilities” from the first sentence of this section since there could also be assets supporting required surplus.
Response	The task force agreed and deleted the phrase.
Comment	One commentator suggested adding wording to state that projected earnings rates should be consistent with a company’s current investment strategy.
Response	Although this will often be the case, the task force believes that it may be appropriate at times for an appraisal to reflect an investment strategy different from a company’s current strategy and made no change.
Section 3.7, Modeling and Model Validation	
Comment	One commentator suggested adding guidance regarding when an actuary should do stochastic testing.
Response	The task force carefully considered this issue and noted that any recommendation on when to use stochastic testing is likely to be obsolete quite quickly as this is a rapidly changing area. The task force concluded that the choice of appropriate methodology should be left to the professional judgment of the actuary given the particular circumstances involved and made no change.
Section 3.9, Documentation (now 3.10)	
Comment	One commentator suggested that the term “actuary’s employer” be changed to “actuary’s principal” as it relates to retention of documentation.
Response	The task force agreed and changed the term to “actuary’s principal.”
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Appraisal Report	
Comment	One commentator believed the report should include a summary of information provided/reviewed in connection with performing the appraisal.
Response	The task force believed that the disclosures called for in sections 4.1, 4.3, and 4.4 sufficiently covered what the commentator suggested.
Section 4.3, Required Disclosure If Not an Actuarial Appraisal (now Appropriate Use of the Term “Actuarial Appraisal”)	
Comment	Several commentators thought that the disclosure required by section 4.3 was inappropriate, that it could be confusing to some readers, and that it perhaps could lead some actuaries to an inappropriate application of an actuarial appraisal simply to avoid the disclosure.
Response	The task force agreed that it was more important to disclose what was done rather than what was not done and revised the language in sections 4.3, 4.1(h), and 4.1(i) to address this concern.
Comment	Two commentators challenged the necessity for this type of disclosure.
Response	The task force believed that only appraisals that meet the definition in this standard should be considered actuarial appraisals. The task force wanted to distinguish any appraisal done by an actuary from an actuarial appraisal that meets the definition per this standard.
	The task force revised the requirements of section 4.3 to state that actuarial communications related to an appraisal that does not meet the definition of an actuarial appraisal contained in this standard should not refer to the appraisal as an actuarial appraisal.

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Comment	One commentator thought that there might be an inconsistency between this section and ASOP No. 41, <i>Actuarial Communications</i> , and asked what an actuary calls an actuarial communication that is an appraisal but not an actuarial appraisal as defined in ASOP No. 19.
Response	While acknowledging that this may be somewhat awkward, the task force believed that this problem would not prevent the actuary from preparing a suitable communication and disclosure and made no change.
Section 4.7, Deviation from Standard (now 4.6)	
Comment	One commentator thought that section 4.7 (now 4.6) was too harsh without proper context as might be found in the proposed <i>Introduction to the Actuarial Standards of Practice</i> .
Response	The task force revised this section to be consistent with the new wording developed by the ASB in light of the adoption of the <i>Introduction to the Actuarial Standards of Practice</i> .
APPENDIX (now Appendix 1)	
Comment	One commentator thought that since appraisals are often based on a set of stochastic projections, this should be acknowledged in the appendix.
Response	<u>The task force agreed and added language on stochastic projections to the appendix.</u>
Comment	One commentator thought that the discussion of current practices should make clearer the distinction between an appraisal value itself and the items, such as price or fair value, that may be influenced by the appraisal value.
Response	The task force believed the existing language was clear and made no change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 20**

**Discounting of Property/Casualty
Unpaid Claim Estimates**

Revised Edition

**Developed by the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2011**

Doc. No. 163

T A B L E O F C O N T E N T S

Transmittal Memorandum

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September 2011

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board and Other Persons Interested in Discounting of Property/Casualty Unpaid Claim Estimates

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 20

This document contains the final version of a revision of ASOP No. 20, *Discounting of Property/Casualty Unpaid Claim Estimates*.

Background

ASOP No. 20 was originally adopted by the ASB in April 1992. The ASB charged the Casualty Committee with preparing this revision to ASOP No. 20 to reflect current terminology and practice, and to provide more consistency with the language in ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*.

Exposure Draft

The exposure draft of this revised ASOP was issued in December 2010 with a comment deadline of May 1, 2011. The Casualty Committee carefully considered the five comment letters received and made changes in several sections in response. For a summary of the issues contained in these comment letters, please see appendix 2.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB adopted this revised standard at its September 2011 meeting.

ASOP No. 20—September 2011

Casualty Committee of the ASB

Beth Fitzgerald, Chairperson

Shawna Ackerman	Dale F. Ogden
Raji Bhagavatala	David J. Otto
Larry Haefner	Marc B. Pearl
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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 20

**DISCOUNTING OF PROPERTY/CASUALTY
UNPAID CLAIM ESTIMATES**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to discounting an unpaid claim estimate to present value for property/casualty coverages. Any reference to “unpaid claims” in this standard includes (unless explicitly stated otherwise) the associated unpaid claim adjustment expense even when not accompanied by the estimation of unpaid claims.
- 1.2 **Scope**—This standard addresses the discounting to present value of unpaid claim estimates for property/casualty coverages. In determining the undiscounted unpaid claim estimate, the actuary should be guided by ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*.

This standard applies when performing professional services related to developing discounted unpaid claim estimates only for events that have already occurred or will have occurred, as of an accounting date, exclusive of estimates developed solely for ratemaking purposes. This standard applies when estimating discounted unpaid claims for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables.

This standard applies only with respect to discounted unpaid claim estimates that are communicated as an actuarial finding in an actuarial document (as described in ASOP No. 41, *Actuarial Communications*). Actions taken by the actuary’s principal regarding such estimates are beyond the scope of this standard.

The terms “reserves” and “reserving” are sometimes used to refer to “unpaid claim estimates” and “unpaid claim estimate analysis.” In this standard, the term “reserve” is limited to its strict definition as an amount booked in a financial statement. Services described above are covered by this standard, regardless of whether the actuary refers to the work performed as “reserving,” “estimating unpaid claims” or any other term.

This standard does not address the appropriateness of using discounted unpaid claim estimates in specific contexts.

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This standard does not address the appropriateness of including a risk margin in specific contexts.

This standard does not apply to the estimation of items that may be a function of discounted unpaid claim estimates or claim outcomes, such as (but not limited to) loss-based taxes, contingent commissions and retrospectively rated premiums.

This standard does not apply to unpaid claims under a “health benefit plan” covered by ASOP No. 5, *Incurred Health and Disability Claims*, ASOP No. 6, *Measuring Retiree Group Benefit Obligations*, or included as “health and disability liabilities” under ASOP No. 42, *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*. However, this standard does apply to health benefits associated with state or federal workers’ compensation statutes and liability policies.

An actuary may develop a discounted unpaid claim estimate in the context of issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves. In such context, the actuary should be guided by ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations associated with the issuance of such a statement.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any actuarial work product covered by this standard’s scope issued on or after January 1, 2012.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Book Value**—The value of an asset or assets, as included in a financial statement or other financial reporting context.
- 2.2 **Discounted Unpaid Claim Estimate**—The actuary’s estimate of the present value of the

unpaid claim estimate.

- 2.3 **Investment Risk**—Uncertainty surrounding the realization of a specified investment income stream.
- 2.4 **Present Value**—The value on a given date of a future payment or series of future payments, discounted to reflect the time value of money.
- 2.5 **Risk-Free Interest Rate**—The theoretical rate of return of an investment with zero risk with respect to payment timing and amount.
- 2.6 **Risk Margin**—A provision for uncertainty in an unpaid claim estimate.
- 2.7 **Unpaid Claim Estimate**—The actuary’s estimate of the obligation for future payment resulting from claims due to past events. For clarity and unless otherwise indicated, this estimate is on an undiscounted basis and the terms “unpaid claim estimate” and “undiscounted unpaid claim estimate” are used interchangeably throughout this standard.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Appropriateness in Context**—The actuary should be aware of the context in which the discounted unpaid claim estimate is to be used. The actuary should use a methodology and assumptions in the discounting process that are appropriate for that context.
- 3.2 **Relative Significance of Assumptions**—If both an undiscounted unpaid claim estimate and a discounted unpaid claim estimate are determined, the actuary should be aware of the differences in the relative significance of various assumptions between undiscounted and discounted unpaid claim estimates. For example, a development factor at an advanced maturity (such as a “tail factor”) is less significant to a discounted unpaid claim estimate than to an undiscounted unpaid claim estimate. Conversely, a change in the timing of loss payments may be more significant to a discounted unpaid claim estimate.
- 3.3 **Payment Timing for Discounting**—The actuary should derive the discounted unpaid claim estimate based on assumptions regarding the timing of future payments. A range of estimates for the timing of payments may be reasonable.
 - 3.3.1 **Assumptions**—The actuary should consider the reasonableness of the assumptions underlying the estimated timing of future payments. Assumptions generally involve significant professional judgment. Assumptions may be implicit or explicit, and may involve interpreting past data or projecting future trends. The actuary should use assumptions that, in the actuary’s professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent.

The actuary should consider the sensitivity of the timing of future payments to reasonable alternative assumptions. (See section 4.1(f) for related disclosure requirements.)

The actuary may provide the principal with results based on a set of assumptions that differ from the actuary’s assumptions, subject to appropriate disclosure as described in section 4.1.

- 3.3.2 **Reconciliation of Estimates**—The cumulative amount of payments used by the actuary for discounting should be consistent with the amount of the unpaid claim estimate, even if the latter has not been derived by techniques based on payment data.
 - 3.3.3 **Consistency of Assumptions**—The actuary should use assumptions in estimating the timing of payments that are consistent with the assumptions used in developing the undiscounted unpaid claim estimate to the extent appropriate.
 - 3.3.4 **Consistency with Expected Future Conditions**—The actuary should determine estimates of the timing of payments that are consistent with conditions expected to prevail during the future payment period. If such conditions are expected to be different from those prevailing during the historical evaluation period, the actuary should make appropriate adjustments.
 - 3.3.5 **Data**—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to selection of data to be used, relying on data supplied by others, reviewing data, and using data.
 - 3.3.6 **Recoverables**—The actuary should consider to the extent appropriate the timing and amount of expected recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation) when projecting the timing of future payments.
 - 3.3.7 **Unpaid Claim Components**—The actuary should consider whether such components that have a material effect on the timing and amount of future payments have been reflected appropriately when projected future payments are comprised of multiple components (for example, line of business, accident year, claim adjustment expense).
- 3.4 **Discount Rates**—Projected future payments are discounted to present value using discount rate assumptions.
- 3.4.1 **Discount Rate Basis**—Discounted unpaid claim estimates may be used in a variety of contexts and the appropriate selected discount rates are a function of the context. A range of discount rates may be reasonable. Common approaches to selecting a discount rate include:

- a. **Risk-Free Approach**—The selected discount rates in this approach approximate risk-free interest rates. Risk-free interest rates can be approximated by rates of investment return available on fixed income assets having low investment risk and timing characteristics comparable to those assumed in the discounting of unpaid claim estimates.
 - b. **Portfolio Approach**—The selected discount rates in this approach are based on the anticipated return from a selected portfolio of assets. The actuary should consider to the extent appropriate the relationships between the book and market values of assets, between the anticipated portfolio rates of return and market rates of return, and between the maturities of the assets and the estimated timing of future payments on unpaid claims. The portfolio rates of return should be net of investment expenses.
 - c. **Discount Rates Requested by Another Party**—The actuary is responsible for the discount rates employed in preparing the actuarial findings unless the actuary appropriately discloses otherwise. The actuary should be guided by section 3.4.4 of ASOP No. 41, when using discount rates requested by another party.
- 3.4.2 **Effect of Income Taxes**—The actuary should consider whether the discount rates should be consistent with investment returns before or after the payment of income taxes.
- 3.5 **Ranges**—The actuary should consider the uncertainty in the discounted unpaid claim estimate when determining a range of estimates. The actuary should recognize that the uncertainty inherent in discounted unpaid claim estimates generally is different than the uncertainty inherent in undiscounted unpaid claim estimates.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the discounted unpaid claim estimate and refer to ASOP Nos. 23 and 41 for additional guidance on disclosure.

In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

- a. the assumptions as to selected discount rates and the basis for those assumptions, including the effect of income taxes, as described in section 3.4;
- b. to the extent practical, the difference between the undiscounted unpaid claim

- estimate and the discounted unpaid claim estimate;
- c. whether the discounted unpaid claim estimate includes a risk margin, and if so, the basis for the risk margin (for example, stated percentile of distribution or stated percentage load above expected);
 - d. significant limitations, if any, that constrained the actuary’s discounted unpaid claim estimate analysis such that, in the actuary’s professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result;
 - e. the following dates: (1) the accounting date of the discounted unpaid claim estimate, which is the date used to separate paid versus unpaid claim amounts; (2) the valuation date of the discounted unpaid claim estimate, which is the date through which transactions are included in the data used in the discounted unpaid claim estimate analysis; and (3) the review date of the discounted unpaid claim estimate, which is the cutoff date for including information known to the actuary in the discounted unpaid claim estimate analysis, if appropriate;
 - f. specific significant risks and uncertainties, if any, with regard to actual timing of future payments;
 - g. significant events, assumptions, or reliances, if any, underlying the discounted unpaid claim estimate that, in the actuary’s professional judgment, have a material effect on the discounted unpaid claim estimate, including assumptions regarding the accounting basis or application of an accounting rule;
 - h. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - i. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - j. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary otherwise deviated materially from the guidance of this ASOP.
- 4.2 **Additional Disclosures**—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:
- a. When the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided.

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- b. When the unpaid claim estimate is an update of a previous estimate, the actuary should disclose changes in assumptions, procedures, methods or models that the actuary believes to have a material impact on the discounted unpaid claim estimate and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In 1992, the ASB issued ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*. Prior to that, there was no standard of practice concerning discounting of property and casualty loss and loss adjustment expense reserves. Since the issuance of ASOP No. 20, the ASB has issued ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* and, ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. This revision provides more consistency with the language in these two ASOPs, and is more relevant now with the increased use of discounting related to fair value calculations.

The appropriateness of discounting unpaid claim estimates in various financial reporting contexts is a controversial topic. Traditionally, property and casualty unpaid claim estimates have not been discounted except in certain narrowly defined circumstances. However, the issue of discounting reserves has been discussed for many years. For example, the issue appeared in the 1927 *Proceedings of the Casualty Actuarial Society*, in an article by Benedict D. Flynn. In 1986, the U.S. Congress passed legislation prescribing discounting procedures for income-tax purposes. In the past, most state insurance departments prohibited discounting; some departments have permitted discounting for some lines of business. The National Association of Insurance Commissioners has consistently been opposed to discounting except in certain specific circumstances. The accounting profession is studying the issue as it relates to financial reporting.

Historically, the issue of reserve discounting has been closely related to the issue of risk margins. Undiscounted reserves are often considered to contain a needed implicit risk margin in the difference between undiscounted reserves and discounted reserves. If discounted reserves were incorporated into financial statements, many would argue that an explicit risk margin would become necessary. Suggestions for the treatment of that risk margin include treatment as a liability item, a segregated surplus item, or an off-balance-sheet item.

The discounting of unpaid claim estimates and risk margins are both important elements in estimating the fair value of unpaid claim estimates, yet neither is explicitly included in most current financial reporting. Much of the rationale for unpaid claim estimate discounting is related to the issue of fair value; however, some believe that discounted unpaid claim estimates without risk margin may be a poorer estimate of fair value than undiscounted unpaid claim estimates.

Unpaid claim estimate discounting calculations are commonly performed in conjunction with

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valuations of insurance companies for purposes such as acquisition or merger, or with transfers of portfolios or unpaid claims. In these instances and for other reasons, there are increasing numbers of circumstances where actuaries are asked to determine or evaluate discounted unpaid claim estimates.

Current Practices

Actuaries are currently guided by the existing ASOP No. 20. Other ASOPs issued by the Actuarial Standards Board pertaining to discounting of unpaid loss and loss adjustment expense estimates include ASOP No. 23, *Data Quality*; ASOP No. 36; ASOP No. 41, *Actuarial Communications*; and ASOP No. 43. In addition, disclosures related to discounting are required by the National Association of Insurance Commissioners, and guidance may be forthcoming as part of new International Financial Reporting Standards that are currently under development.

Numerous educational papers are in the public domain that are relevant to the topic of discounting and risk loads, including those published by the Casualty Actuarial Society. While these may provide useful educational guidance to practicing actuaries, these are not actuarial standards and are not binding.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *Discounting of Property/Casualty Unpaid Claim Estimates*, was issued in December 2010 with a comment deadline of May 1, 2011. Five comment letters were received, one of which was submitted on behalf of multiple commentators. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. All comments were carefully considered and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Casualty Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this revised standard.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested that the standard be modified to apply broadly to loss sensitive estimates, such as retrospective premiums or the payment of claims-related assessments.
Response	The reviewers note the focus of this standard was on discounting unpaid claim estimates and, therefore, section 1.2 reiterates similar exclusions found in section 1.2 of ASOP No. 43, <i>Property/Casualty Unpaid Claim Estimates</i> , which does not apply to loss sensitive estimates.
SECTION 2. DEFINITIONS	
Comment	One commentator noted that the terms “payments” and “future payments” were used throughout the document and suggested that the terms be defined to include the inflow of recoveries in order for it to be clear that potential inflows should be considered.
Response	Section 1.2 identifies that this standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables. As such, the reviewers believe that it is clear that payments and future payments should consider potential inflows and outflows depending on the context.
Comment	One commentator suggested that a definition for discount rate be added to the standard.
Response	The reviewers do not believe that a definition is necessary because it is sufficiently described in sections 2.4 and 3.4.
Section 2.1, Book Value	
Comment	One commentator suggested that the definition of book value be removed because the term is not used in the standard.
Response	The reviewers note the definition is referenced in section 3.4.1(b) and thus made no change.

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Section 2.3, Investment Risk	
Comment	Several commentators suggested expanding the list of examples of investment risk to include market risk and reinvestment risk.
Response	The reviewers believe that the definition is sufficiently clear without the need for examples. The examples given previously with credit risk and liquidity risk, and their associated definitions were removed in order to avoid the misunderstanding that they were an exhaustive list.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Appropriateness in Context	
Comment	Several commentators suggested that there may be circumstances where the actuary may use more than one methodology when performing the discounting calculation. For example, multiple methods may be used to determine a reasonable range of discounted unpaid claim estimates.
Response	The reviewers believe that actuaries generally use only one methodology when discounting unpaid claim estimates; however, the reviewers acknowledge that an actuary may want to use more than one methodology in some circumstances. The reviewers believe that use of more than one methodology in this context would be characterized as “a methodology” and hence no change was made.
Section 3.3, Payment Timing for Discounting	
Comment	Commentators interpreted the wording of section 3.3 to imply that an actuary must explicitly project the timing of future payments and that an implicit assumption regarding the timing might be a violation of the standard.
Response	The reviewers acknowledge that the timing of future payments might be estimated implicitly and rephrased this paragraph to avoid confusion.
Section 3.4, Discount Rates	
Comment	One commentator suggested that the term “discount rate” was incorrect and this standard should use “interest rate” in its place.
Response	The reviewers disagree. The term discount rate was chosen to be consistent with other standards of practice as well as other practice areas.
Comment	One commentator interpreted the approaches in section 3.4.1 to be a complete and exhaustive list and asked if that is what was intended.
Response	The approaches are not intended to be an exhaustive list. This section was rephrased to indicate that there may be other approaches.
Comment	One commentator suggested that some liability cash flows may extend beyond the normal range of asset maturity dates and that this standard provides no guidance in these situations.
Response	The reviewers believe techniques to address this situation, such as extrapolation, are consistent with the guidance in sections 3.4.1(a) and 3.4.1(b), and made no change.
Comment	One commentator requested that reference be made to U.S. Treasuries when discussing the use of a risk-free rate for the discount rate.
Response	The reviewers do not believe that sovereign debt or any other asset can be unequivocally defined as having low investment risk even though U.S. Treasuries have been historically viewed as low-risk. The reviewers believe that the risk-free approach in section 3.4.1(a) provides sufficient guidance for the actuary when approximating a

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	risk-free interest rate.
Comment	One commentator suggested that a discount rate might be based on a benchmark portfolio of assets and questioned whether or not this was accepted practice according to the standard.
Response	The reviewers note that section 3.4.1(b) does not prescribe whether the portfolio of assets is derived from actual assets or a benchmark. The use of either type of asset will depend on the context as mentioned in section 3.4.1.
Comment	Several commentators objected to the phrase that it is “generally expected” that the actuary is responsible for the discount rates employed in preparing the actuarial findings and suggested section 3.4.1(c) be rephrased accordingly.
Response	The reviewers agree and rephrased section 3.4.1(c).
Section 3.5, Ranges	
Comment	One commentator noted that there are many types of ranges, such as a range of best estimates or a range of possible outcomes, and this section was not clear which type of range was being referenced.
Response	The reviewers changed the word “range” to “range of estimates” in this section. The type of range used will depend on the context and, according to section 4.2(a), the actuary should disclose the basis of the range, if one is provided.
Section 3.6, Risk Margins [Exposure Draft]	
Comment	One commentator disagreed that an undiscounted unpaid claim estimate contains a margin.
Response	This section was removed and a sentence was added to section 1.2, which states: “This standard does not address the appropriateness of including a risk margin in specific contexts.”
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator suggested that the amount of the risk margin should be disclosed to the extent practical.
Response	The reviewers believe that in certain cases it may be difficult to quantify the amount of a risk margin and language requiring disclosure of the amount “to the extent practical” could place an undue burden on the actuary.
Comment	One commentator suggested deleting sections (d), (e), and (g) because they are duplicative with other standards.
Response	The reviewers acknowledge that the wording is similar to ASOP No. 43 but these sections are used in this standard to address the context of discounted unpaid claims estimates.
Comment	One commentator suggested that in some cases an estimate is discounted to a different date that may not coincide with the accounting date and suggested that section 4.1(e) include the concept of a separate “discount to” date.
Response	The reviewers agree that there may be circumstances where the estimate is discounted to a date different from the accounting date and believe this standard does not prevent the actuary from using and disclosing the different date. In addition, section 4.1(g) would require the disclosure of a different “discount to” date by virtue of it being a significant assumption underlying the discounted unpaid claim estimate.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 20**

**Discounting of Property/Casualty
Claim Estimates**

**Developed by the
Task Force to Revise ASOP No. 20 of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2023**

Doc. No. 209

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June 2023

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board and Other Persons Interested in Discounting of Property/Casualty Claim Estimates

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 20

This document contains ASOP No. 20, *Discounting of Property/Casualty Claim Estimates*.

History of the Standard

ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*, was originally adopted by the ASB in April 1992. In 2011, ASOP No. 20 was revised to reflect current terminology and practice and to provide more consistency with the language in ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. The 2011 revision removed guidance on risk margins.

This revision addresses potential scope gaps with other ASOPs, reflects the interaction between this standard and ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*, and addresses changes in actuarial practice in the area of estimating the future costs of prospective risk transfer or risk retention for loss accrual determinations, premium setting, and ratemaking assignments.

This revision also addresses the issue of discount rates provided by others (e.g., requested by the principal or provided by investment managers or finance departments), because the discount rate is a material assumption in developing a discounted claim estimate. In some circumstances when providing actuarial services, the actuary did not comment on the reasonableness of the discount rate(s) but rather stated that the discount rate was outside the scope of the actuarial services.

Exposure Draft

The exposure draft was issued in June 2022 with a comment deadline of September 30, 2022. Five comment letters were received and considered in making changes that are reflected in this standard.

Notable Changes from the Exposure Draft

Notable changes from the exposure draft are summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. Sections 1.2 and 2.1 were modified to allow the actuary to consider the loss and loss adjustment expense elements separately in a claim estimate.
2. Section 2.4 was revised to make the definition consistent with ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*.
3. Section 2.6 was revised to reflect that present value can be related to any future cash flow.
4. Section 2.8 was modified to clarify that a risk margin may apply to a claim estimate or discounted claim estimate.
5. Section 3.3.1 was modified to clarify that payment pattern assumptions should be unbiased prior to the application of risk margins.
6. In section 3.4.1.3, guidance was added related to the reasonableness of discount rates selected by another party. The related disclosure was modified in section 4.1(g).

Notable Changes from the Existing ASOP

A cumulative summary of notable changes from the existing standard is below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. In section 1.2, the scope of the standard was expanded to include the discounting of future claim estimates for prospective risk transfer or risk retention, as addressed by ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*.
2. Sections 1.2 and 2.1 were modified to allow the actuary to consider the loss and loss adjustment expense elements separately in a claim estimate.
3. In section 2, definitions were added for the following terms: claim estimate, coverage, discounted claim estimate, insurance risk, risk retention, and risk transfer.
4. In section 2.8, the definition of risk margin was revised.
5. Section 3.3.1 was modified to clarify that payment pattern assumptions should be unbiased prior to the application of risk margins.
6. In section 3.4, guidance related to discount rate selection and appropriateness was added. Specifically, guidance was added related to the materiality and reasonableness of discount rates selected by another party in section 3.4.1.3, and the related disclosure was modified in section 4.1(g).

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7. In section 3.5, guidance on risk margins has been reintroduced to the standard, revised, and expanded.
8. Guidance on reliance has been added in sections 3.8, 3.9, 3.10, and 3.11.
9. Guidance on documentation has been updated and expanded in section 3.12.
10. Disclosure requirements were added in section 4, mostly to address expanded guidance throughout section 3.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in June 2023 to adopt this standard.

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Task Force to Revise ASOP No. 20

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 20

**DISCOUNTING OF PROPERTY/CASUALTY
CLAIM ESTIMATES**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to discounting **claim estimates** for property/casualty **coverages** to a **present value**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services that involve the discounting of **claim estimates** for property/casualty **coverages** to a **present value**. **Claim estimates** include unpaid **claim estimates** and future **claim estimates**. Unpaid **claim estimates** represent an estimate of the obligation for future loss and loss adjustment expense payments resulting from claims due to past events. Future **claim estimates** represent an estimate of loss and loss adjustment expenses associated with prospective property/casualty **risk transfer** or **risk retention**.

This standard applies to actuaries when estimating **discounted claim estimates** for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to actuaries when estimating discounted gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), discounted amounts after such recoverables, and discounted amounts of such recoverables.

If the actuary's actuarial services involve reviewing **discounted claim estimates** developed by another party, the actuary should follow the guidance in section 3 to the extent practicable.

When determining the unpaid **claim estimates**, the actuary should refer to ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. When determining the future **claim estimates** associated with prospective **risk transfer** or **risk retention**, the actuary should refer to ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*.

This standard does not address whether the actuary should use **discounted claim estimates** in a specific circumstance.

This standard does not address whether the actuary should include a **risk margin** in a specific circumstance.

This standard does not apply to actuaries when estimating items that may be a function of **discounted claim estimates** or claim outcomes, including but not limited to loss-based taxes, contingent commissions, and retrospectively rated premiums.

This standard applies to actuaries when providing actuarial services with respect to health benefits associated with state or federal workers' compensation statutes and liability policies. This standard does not apply to actuaries when performing actuarial services with respect to unpaid claims under a "health benefit plan" covered by ASOP No. 5, *Incurred Health and Disability Claims*, ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*, or included as "health and disability liabilities" under ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*.

If the actuary determines that the guidance in this standard conflicts with ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, this ASOP governs.

If the actuary determines that the guidance in this ASOP conflicts with a cross-practice ASOP (applies to all practice areas), this ASOP governs.

If a conflict exists between this standard and applicable law (statutes, regulations, and other legally binding authority), the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 **Effective Date**—This standard is effective for any actuarial work product covered by this standard's scope issued on or after December 1, 2023.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the standard. The actuary should also refer to ASOP No. 1, *Introductory Actuarial Standard of Practice*, for definitions and discussions of common terms, which do not appear in bold in this standard.

2.1 **Claim Estimate**—An estimate on an undiscounted basis of the obligation for future loss and loss adjustment expenses resulting from claims due to past events or an estimate of

loss and loss adjustment expenses associated with prospective property/casualty **risk transfer** or **risk retention**. **Claim estimates** may include elements, such as case reserves, developed by individuals other than actuaries.

- 2.2 **Coverage**—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation to pay benefits, expenses, or claims associated with contingent events.
- 2.3 **Discounted Claim Estimate**—The actuary’s estimate of the **present value** of the **claim estimate**.
- 2.4 **Insurance Risk**—The extent to which the amount or timing of actual insurance cash flows is likely to differ from expected insurance cash flows.
- 2.5 **Investment Risk**—The extent to which the amount or timing of actual investment cash flows may differ from what is expected.
- 2.6 **Present Value**—The value on a given date of a future payment or series of future payments, discounted to reflect the time value of money.
- 2.7 **Risk-Free Interest Rate**—The theoretical rate of return of an investment with zero risk with respect to payment timing and amount.
- 2.8 **Risk Margin**—A provision for uncertainty in a **claim estimate** or a **discounted claim estimate**. A **risk margin** may be implicit or explicit.
- 2.9 **Risk Retention**—A risk-management and risk-control strategy for the assessment, management, or financing of retained risk associated with the specific **coverage**. Examples of **risk retention** include individual and group self-insurance and large deductible programs.
- 2.10 **Risk Transfer**—A risk-management and risk-control strategy, involving legally binding agreements, that shifts responsibility from one party to another or indemnifies one party by another party for the financial obligations associated with the **coverage**. Examples of **risk transfer** include insurance, reinsurance, captive insurance, and loss portfolio transfers.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Intended Purpose**—The actuary should identify the intended purpose of the **discounted claim estimate**, including the date to which the **claim estimate** will be discounted. The actuary should select methods and assumptions in the discounting process that are appropriate for the intended purpose.
- 3.2 **Significance of Methods, Models, and Assumptions**—When selecting methods, models, and assumptions to develop the **discounted claim estimate**, the actuary should take into

account the relative impact of various methods, models, and assumptions on the **discounted claim estimate** versus the **claim estimate**. For example, a development factor at an advanced maturity (such as a “tail factor”) has less impact on a discounted estimate than on an undiscounted estimate. Conversely, a change in the timing of loss payments may have a greater impact on a discounted estimate than on an undiscounted estimate.

- 3.3 **Payment Timing**—The actuary should use reasonable assumptions regarding the timing of future payments to derive a **discounted claim estimate**. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends.

The actuary should take into account the sensitivity of the **discounted claim estimate** to the timing of future payments and may use a range of payment pattern assumptions.

- 3.3.1 **Unbiased Assumptions**—The actuary should use payment pattern assumptions that the actuary expects to have no material bias to underestimation or overestimation of the discounted estimate, prior to consideration of any **risk margins**.
- 3.3.2 **Consistency of Assumptions**—The actuary should use assumptions in estimating the timing of payments that are consistent with the assumptions used in developing the **claim estimate**, when the assumptions are available.
- 3.3.3 **Consistency of Estimates**—The actuary should use cumulative payments for discounting that are consistent with the **claim estimate**, even if the **claim estimate** has not been derived by techniques based on payment data.
- 3.3.4 **Consistency with Expected Future Conditions**—The actuary should determine estimates of the timing of payments that are consistent with conditions expected to prevail during the future payment period. These estimates may reflect past data or projections of future trends in payment timing. If conditions are expected to be different from those prevailing during the historical evaluation period, the actuary should make appropriate adjustments to the payment patterns.
- 3.3.5 **Data**—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to selection of data to be used in developing the payment pattern, relying on data supplied by others, reviewing data, and using data.
- 3.3.6 **Recoverables**—The actuary should take into account the timing and amount of expected recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation) to the extent appropriate.
- 3.3.7 **Unpaid or Future Claim Components**—The actuary should take into account components that may have a material effect on the timing and amount of future payments, such as **coverage**, accident period, and claim adjustment expense.

3.4 **Discount Rates**—The actuary should use reasonable discount rates to derive **discounted claim estimates**. A discount rate may be a single rate or a series of rates, such as a yield curve. A range of discount rates may be reasonable.

3.4.1 **Selection of Discount Rates**—The actuary should select discount rates that are appropriate for the intended purpose. When selecting discount rates, the actuary should consider using one or more of the following approaches:

3.4.1.1 **Risk-Free Approach**—This approach utilizes **risk-free interest rates**. **Risk-free interest rates** can be approximated by rates of investment return available on fixed-income assets having low **investment risk** and timing characteristics comparable to the selected payment timing pattern.

3.4.1.2 **Portfolio Approach**—The selected discount rates in this approach are based on the anticipated return from a selected portfolio of assets. The portfolio of assets may reflect the actual assets supporting the **claim estimates** to be discounted. Alternatively, the portfolio of assets may represent a notional portfolio that the actuary deems to be appropriate based on the characteristics of the notional assets in relation to the **claim estimates** to be discounted.

When determining the appropriateness of a portfolio rate of return as the basis for the selected discount rate, the actuary should refer to ASOP No. 7 for guidance on issues and considerations associated with asset characteristics. The actuary should take into account, to the extent appropriate, the relationships between the book value and market value of assets, between the anticipated portfolio rates of return and market rates of return, and between the maturities of the assets and the estimated timing of future payments.

Portfolio rates of return should be net of investment expenses.

3.4.1.3 **Discount Rates Selected by Another Party**—When using discount rates selected by another party, the actuary should assess the discount rates for reasonableness.

3.4.1.4 **Other Approaches**—Other approaches may be appropriate based on the purpose of the assignment or other circumstances.

3.4.2 **Consideration of Economic Conditions**—When selecting the discount rate assumption, the actuary should take into account economic factors over the expected payment period including, but not limited to, inflation, inflation risk, and macroeconomic conditions. The actuary should consider reflecting short-term versus long-term returns when selecting the discount rate, recognizing that long-term returns are generally more uncertain than short-term returns. The actuary

should consider adjusting the discount rate(s) to reflect the uncertainty in future economic conditions.

- 3.5 **Risk Margins**—The actuary should consider including **risk margins** in a **discounted claim estimate**. Discounting a reasonable undiscounted estimate may result in an inadequate discounted estimate, unless appropriate **risk margins** are included.
- 3.5.1 **Considerations in Determining the Amount of Risk Margin**—When determining the amount of **risk margin**, the actuary should take into account the increase in uncertainty associated with the discounting calculation due to uncertainties in claim payment timing and discount rate selection. The actuary should also take into account the decrease in the implicit **risk margin** due to discounting.
- 3.5.2 **Implicit and Explicit Risk Margins**—The actuary may introduce implicit **risk margins** through the selection of the **claim estimate**, the payment pattern, or the discount rate. The actuary may include explicit **risk margins** as an absolute amount (for example, stated percentile of distribution, a fixed amount, or stated percentage load above expected) or through an explicit adjustment to the selected discount rate(s). The resulting adjusted discount rate may also include an implicit **risk margin** contemplating **investment risk** or **insurance risk**.
- 3.5.3 **Applicable Law and Accounting Standards**—The actuary should take into account whether applicable law and accounting standards impose constraints on the use of **risk margins**.
- 3.6 **Significant Limitations**—The actuary should identify any significant limitations that constrained the actuary’s **discounted claim estimate** analysis if, in the actuary’s professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result.
- 3.7 **Changes in Methods, Models, and Assumptions**—When the **discounted claim estimate** is an update of a previous estimate, the actuary should identify changes in methods, models, or assumptions that the actuary believes to have a material impact on the **discounted claim estimate** and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.
- 3.8 **Reliance on Methods, Models, or Assumptions Selected by Another Party**—When relying on methods, models, or assumptions selected by another party, the actuary should refer to ASOP Nos. 41 and 56, *Modeling*, for guidance.
- 3.9 **Reliance on Others for Data, Projections, and Supporting Analysis**—The actuary may rely on data, projections, and supporting analysis supplied by others. When practicable, the actuary should review the data, projections, and supporting analysis for reasonableness and consistency. For further guidance, the actuary should refer to ASOP Nos. 23 and 41.

- 3.10 **Reliance on Another Actuary**—The actuary may rely on another actuary who has developed the **claim estimate**, estimated payout pattern(s), the discount rate(s), or the **risk margin(s)**. However, the relying actuary should be reasonably satisfied that the other actuary is qualified to perform the actuarial service(s), the actuarial service was performed in accordance with applicable ASOPs, and the actuarial service performed is appropriate for the project’s objective.
- 3.11 **Reliance on Expertise of Others**—An actuary may rely on the expertise of others (including actuaries not performing actuarial services) in the fields of knowledge used in the development of the **claim estimate**, estimated payout pattern(s), discount rate(s), or the **risk margin(s)**. In determining the appropriate level of such reliance, the actuary should take into account the following:
- a. whether the individual or individuals upon whom the actuary is relying has expertise in the applicable field; and
 - b. the extent to which the development of the **claim estimate**, estimated payout pattern(s), discount rate(s), or the **risk margin(s)** has been reviewed or opined on by others with expertise in the applicable field, including commonly known significant differences of opinion among others with expertise concerning aspects of the development of the above items that could be material to the actuary’s use of them.
- 3.12 **Documentation**—The actuary should prepare and retain documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should take into account the intended purpose or use of the **discounted claim estimate** and refer to ASOP Nos. 7, 23, 41, and 56.

In addition, the actuary should disclose the following in such actuarial reports, if applicable:

- a. the **claim estimate**, the associated **discounted claim estimate**, and the intended purpose of the **discounted claim estimate**, including the date to which the **claim estimate** is discounted (see section 3.1);

- b. material differences, if any, between the methods, models, and assumptions underlying the **claim estimate** and the **discounted claim estimate** (see section 3.2);
 - c. the payment timing assumptions and the basis for those assumptions (see section 3.3);
 - d. specific significant risks and uncertainties, if any, with regard to actual timing of future payments (see section 3.3);
 - e. the discount rate assumptions and the basis for those assumptions (see section 3.4);
 - f. the basis of the range of estimates, if the actuary provides a range (see section 3.4);
 - g. when the discount rate was selected by another party, the party that provided the discount rate, the reasonableness of the discount rate, and the basis for the determination of reasonableness (see section 3.4.1.3);
 - h. whether the **discounted claim estimate** includes a **risk margin**, and the basis for any explicit **risk margin** (see section 3.5);
 - i. any significant limitations that constrained the actuary's **discounted claim estimate** analysis (see section 3.6);
 - j. changes in methods, models, or assumptions that the actuary believes to have a material impact on the **discounted claim estimate** and the reasons for such changes to the extent known by the actuary, if the **discounted claim estimate** is an update of a previous estimate (see section 3.7);
 - k. the extent of any reliance on assumptions or methods selected by another party (see section 3.8);
 - l. the extent of any reliance on others for data, projections, and supporting analysis (see section 3.9);
 - m. the extent of any reliance on another actuary (see section 3.10); and
 - n. the extent of any reliance on expertise of others (see section 3.11).
- 4.2 **Additional Disclosures in an Actuarial Report**—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law or accounting standards;

- b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this standard.
- 4.3 Confidential Information—Nothing in this standard is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

In 1992, the Actuarial Standards Board (ASB) issued ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*. Prior to that, there was no standard of practice concerning discounting of property and casualty loss and loss adjustment expense reserves. Since the issuance of ASOP No. 20, the ASB has issued ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, and ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. The 2012 revision of ASOP No. 20 provided more consistency with the language in these two ASOPs and updated guidance for the increased use of discounting related to fair value calculations.

In 2017, the ASB issued ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*. ASOP No. 53 provides guidance for actuaries engaged in loss accrual determinations, premium setting, and ratemaking assignments. The introduction of ASOP No. 53 highlighted the need to extend the guidance of ASOP No. 20 to these types of actuarial work products in a manner similar to the relationship between ASOP No. 20 and ASOP No. 43. In practice, a wide variety of loss reserving and loss funding or ratemaking assignments are performed concurrently using the same data and similar methods and assumptions. In the context of ratemaking, this standard may provide guidance on the discounting of the loss and loss adjustment expense components.

One challenge related to discounting is that the appropriateness of discounting varies greatly depending on the line(s) of insurance coverage, the type of risk financing or risk retention mechanism, the applicable financial reporting and accounting standards, and even the intended use of the work product (for example, insurance company valuation versus statutory loss reserving). As a result, the use of discounting is inexorably tied to the context of the assignment. Traditionally, for admitted U.S. property and casualty insurance companies, unpaid claim estimates have not been discounted except in certain narrowly defined circumstances. However, in a wide and growing variety of other circumstances discounting is commonplace. In 1986, the U.S. Congress passed legislation prescribing discounting procedures for income-tax purposes. In the past, most state insurance departments prohibited discounting; some departments have permitted discounting for some lines of business. While the National Association of Insurance Commissioners (NAIC) has consistently been opposed to discounting except in certain specific circumstances, other regulators have moved to requiring discounting. The various applicable accounting standards organizations have taken a similarly divergent set of positions in their standards.

Historically, the issue of reserve discounting has been closely related to the issue of risk margins. Undiscounted reserves are often considered to contain a needed implicit risk margin in the difference between undiscounted reserves and discounted reserves. If discounted reserves were incorporated into financial statements, many would argue that an explicit risk margin would become necessary. Suggestions for the treatment of that risk margin include treatment as a liability item, a segregated surplus item, or an off-balance-sheet item.

Unpaid claim estimate discounting calculations are commonly performed in conjunction with valuations of insurance companies for purposes such as acquisitions or mergers, commutations, transfers of portfolios of unpaid claims, or other reinsurance transactions. In these instances and for other reasons, actuaries are being asked to determine or evaluate discounted unpaid claim estimates more frequently.

Current Practices

Actuaries are guided by ASOP No. 20, *Discounting of Property/Casualty Claim Estimates*. Other ASOPs issued by the ASB pertaining to discounting of unpaid loss and loss adjustment expense estimates include ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*; ASOP No. 23, *Data Quality*; ASOP No. 36; ASOP No. 41, *Actuarial Communications*; ASOP No. 43; and ASOP No. 53. In addition, disclosures related to discounting are required by the NAIC, and guidance may be forthcoming as part of new International Financial Reporting Standards that are currently under development.

Numerous educational papers relevant to the topic of discounting and risk loads, including those published by the Casualty Actuarial Society, are in the public domain. While these may provide useful educational information to practicing actuaries, they are not actuarial standards of practice and are not binding.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the proposed revision of ASOP No. 20, *Discounting of Property/Casualty Claim Estimates*, was issued in June 2022 with a comment deadline of September 30, 2022. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 20 Task Force and the Casualty Committee of the Actuarial Standards Board (ASB) carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the ASOP No. 20 Task Force and the Casualty Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that are suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 20 Task Force, the Casualty Committee, and the ASB. The section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final standard.

GENERAL COMMENTS	
Comment	One commentator proposed an alternative way of discounting using specific asset cash flows.
Response	The reviewers note that section 3.4.1.4 allows for the use of alternative reasonable methods for selecting the discount rate and made no change.
Comment	One commentator suggested being careful about not implying actuarial authority to add risk margins where that authority does not exist.
Response	The reviewers agree and note that section 1.2 states, “This standard does not address whether the actuary should include a risk margin in a specific circumstance.” The reviewers added section 3.5.3 to clarify this issue.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	Two commentators suggested clarifying that the proposed ASOP would also apply when an actuary is discounting figures that are not claim estimates or expanding the definition of “claim estimates” to include other loss estimates.
Response	The reviewers modified sections 1.2 and 2.1 to clarify this issue.

SECTION 2. DEFINITIONS	
Section 2.4, Insurance Risk	
Comment	One commentator was concerned that the current language excluded reinsurance premiums paid to others, unless one treats such premiums as an expense.
Response	The reviewers modified the language.
Comment	One commentator recommended changing “level” to “amount.”
Response	The reviewers agree and made the change in sections 2.4 and 2.5.
Section 2.6, Present Value	
Comment	One commentator suggested removing the word “claim.”
Response	The reviewers agree and deleted “claim.”
Section 2.8, Risk Margin	
Comment	Two commentators suggested adding “or a discounted claim estimate” at the end of the first sentence.
Response	The reviewers agree and made the change.
Comment	One commentator said this definition conflicts with section 3.5.
Response	The reviewers added “or a discounted claim estimate” to incorporate risk margins in all contexts.
Section 2.10, Risk Transfer	
Comment	One commentator suggested using a word other than “strategy.”
Response	The reviewers believe the language is appropriate, note that the language is consistent with ASOP No. 53, <i>Estimating Future Costs for Prospective Property/ Casualty Risk Transfer and Risk Retention</i> , and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, Significance of Methods, Models, and Assumptions	
Comment	Two commentators expressed concern regarding situations where the claim estimate was developed by someone other than the actuary.
Response	The reviewers modified the language in section 2.1 and 3.2 to clarify.
Section 3.3, Payment Timing	
Comment	One commentator proposed expanded language based on section 3.6.2 of ASOP No. 43, <i>Property/Casualty Unpaid Claim Estimates</i> .
Response	The reviewers agree, believe the language improves consistency with ASOP Nos. 43 and 53, and made the change.
Section 3.3.1, Unbiased Assumptions	
Comment	One commentator expressed concern about implicit risk margins in the payment pattern resulting in biased assumptions.
Response	The reviewers clarified the language to address this concern.

Comment	One commentator asked whether the section should be limited to unbiased estimators.
Response	The reviewers believe the guidance is appropriate and made no change.
Section 3.3.2, Consistency of Assumptions	
Comment	One commentator suggested adding language to address situations when documentation for the undiscounted value is not available.
Response	The reviewers modified the language.
Section 3.3.3, Consistency of Estimates	
Comment	One commentator said “cumulative payments” was unclear.
Response	The reviewers believe the language is clear and made no change.
Section 3.4.1, Selection of Discount Rates	
Comment	One commentator suggested adding “to the extent consistent with the intended purpose and use” to the first sentence.
Response	The reviewers believe sections 3.1 and 3.4.1 sufficiently address the commentator’s concern and made no change in response to this comment.
Comment	One commentator suggested clarifying that the actuary needs to first know what is allowed and appropriate for the intended use and the context (e.g., the accounting standards, the nature of the assignment) and to then select the discount rate within those parameters.
Response	The reviewers believe section (d) (now section 3.4.1.4) allows for other approaches and made no change in response to this comment.
Section 3.4.2, Consideration of Economic Conditions	
Comment	One commentator suggested adding language to clarify that the whole payment period should be considered.
Response	The reviewers agree and made the change.
Comment	One commentator suggested adding more guidance on adjusting discount rates.
Response	The reviewers believe the guidance is sufficient and made no change.
Section 3.5, Risk Margins	
Comment	One commentator suggested reconciling the description and use of risk margins in this ASOP with the description and use of risk margins in ASOP No. 43.
Response	The reviewers note that section 2.8 defines risk margin as “A provision for uncertainty in a claim estimate or a discounted claim estimate. A risk margin may be implicit or explicit” and reconciles with the references to risk margins in ASOP No. 43.
Comment	Several commentators expressed concern about when discounting would be appropriate within the context of applicable law and accounting standards.
Response	The reviewers note that section 1.2 makes it clear that the standard does not require discounting or the introduction of a risk margin. The reviewers moved applicable law and accounting standards to section 3.5.3 for clarity.

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Comment	One commentator suggested adding the language “to reduce the risk that the discounted estimate will become inadequate.”
Response	The reviewers note that section 3.5 states, “Discounting a reasonable undiscounted estimate may result in an inadequate discounted estimate, unless appropriate risk margins are included.” As a result, the reviewers made no change.
Comment	One commentator suggested more detail in the discussion of considerations for risk margins.
Response	The reviewers believe the level of detail is appropriate and made no change.
Section 3.5(b), Implicit and Explicit Risk Margins (now section 3.5.2)	
Comment	One commentator suggested avoiding the use of “may” in this section.
Response	The reviewers believe the language is appropriate and made no change.
Comment	One commentator proposed alternative language related to implicit and explicit risk margins.
Response	The reviewers believe the language is clear and made no change.
Section 3.7, Changes in Methods, Models, and Assumptions	
Comment	One commentator suggested clarifying that the intent is for the actuary to disclose changes in methods, models, or assumptions that the actuary believes to have a material impact on the discounted claim estimate, when comparing one discounted claim estimate to another (which may reflect different evaluation dates, valuation dates, present value dates, and so on).
Response	The reviewers believe the language is clear, aligns with other standards including ASOP No. 43, and made no change.
APPENDIX 1, BACKGROUND AND CURRENT PRACTICES	
Comment	One commentator requested the addition of “commutations” in the background section.
Response	The reviewers agree and made the change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 21**

Revised Edition

**Responding to or Assisting Auditors or Examiners
in Connection with Financial Audits, Financial Reviews, and
Financial Examinations**

**Developed by the
Task Force to Revise ASOP No. 21 of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2016**

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September 2016

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 21

This document contains the final version of a revision of ASOP No. 21, now titled *Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations.*

Background

In 2002, the ASB decided that a revision of ASOP No. 21, whose predecessor was originally adopted in 1974 and was revised and published in 1993, was necessary because accounting and financial reporting had become increasingly complex since the original standard was issued and because audit issues had received increased attention in recent years. As a result, the version preceding this revision was adopted in 2004.

In 2014, the ASB decided that another revision of ASOP No. 21 was necessary. Financial audits, financial reviews, and financial examinations had evolved significantly since 2004. The prior version of ASOP No. 21 did not address the actuary's responsibility with respect to process and controls in the Sarbanes-Oxley environment, and was adopted before the National Association of Insurance Commissioners promulgated the Model Audit Rule. Furthermore, audits, reviews, and examinations are increasingly conducted on a risk-focused basis and this contributed to the need for a revision to ASOP No. 21.

Accordingly, in 2014, the ASB created a task force, under the direction of the General Committee, to consider revisions to this standard. An exposure draft was released in September 2015 with a comment deadline of December 31, 2015. Nineteen comment letters were received and considered in making changes that were reflected in this final revised standard. For a summary of the substantive issues contained in the comment letters on the exposure draft, please see appendix 2.

The General Committee would like to thank former committee members Jeremy J. Brown, Charles F. Cook, John C. Lloyd, Cande J. Olsen, and Lance J. Weiss for their contribution to the development of this ASOP.

The ASB voted in September 2016 to adopt this standard.

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Task Force to Revise ASOP No. 21

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 21

**RESPONDING TO OR ASSISTING AUDITORS OR EXAMINERS
IN CONNECTION WITH FINANCIAL AUDITS, FINANCIAL REVIEWS, AND
FINANCIAL EXAMINATIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services while responding to or assisting **auditors** or **examiners** in connection with a **financial audit**, **financial review**, or **financial examination**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services as a **responding actuary** or as a **reviewing actuary** in connection with a **financial audit** or **financial review** in accordance with **generally accepted auditing standards** or a **financial examination** for the purpose of oversight of the financial condition of an **entity**. This standard does not apply to actuaries when providing services in connection with filings such as rate filings, tax returns, or the schedules of actuarial information filed with the Form 5500. For example, this standard does not apply to Schedules SB or MB attached to the Form 5500 but would apply to the plan audit. The standard does not apply to actuaries providing services in connection with the audit, review, or examination of **contract performance**. This standard applies to actuaries working as part of an internal audit function only to the extent that the actuary directly assists an **auditor** or **examiner**.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

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- 1.4 **Effective Date**—This standard will be effective for any actuarial work in connection with a **financial audit**, **financial review**, or **financial examination** for fiscal periods beginning on or after December 15, 2016.

Section 2. Definitions

The terms below are defined for use in this standard of practice.

- 2.1 **Auditor**—The external firm or professional engaged to conduct a **financial audit** or **financial review** in accordance with **generally accepted auditing standards** for the purpose of issuing an opinion on a **financial statement**.
- 2.2 **Contract Performance**—The fulfillment of an **entity's** obligations required by a contract, for example, compliance under the provisions of a reinsurance contract or under a contract that includes a retrospective rate adjustment or experience refund.
- 2.3 **Entity**—An institution, company, corporation, partnership, government agency, university, employee benefit plan, or other organization that may be subject to a **financial audit**, **financial review**, or **financial examination**, as well as the individuals who are authorized to act on behalf of the organization.
- 2.4 **Examiner**—An employee of or contractor to state or federal regulators performing a **financial examination** on behalf of a governmental agency responsible for oversight of the financial condition of the **entity**.
- 2.5 **Financial Audit**—An evaluation of **financial statements** or internal controls over financial reporting by an **auditor**, conducted under **generally accepted auditing standards**, with a view to expressing an opinion on whether the **financial statements** are presented fairly in all material respects within the applicable financial reporting framework or on the effectiveness of the **entity's** internal controls over financial reporting.
- 2.6 **Financial Examination**—An evaluation of an **entity's** financial condition by an **examiner**. It will generally include a review of the **financial statement** and will often include a review of financial strength, corporate governance, or management oversight.
- 2.7 **Financial Review**—An evaluation, by performing limited procedures, of **financial statements** or internal controls over financial reporting by an **auditor**, conducted under **generally accepted auditing standards**. The evaluation supports an **auditor's** opinion on whether any material modifications should be made to the **financial statements** or to the **entity's** internal controls over financial reporting. A **financial review** is often performed on interim **financial statements**. For this standard, a financial review does not

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include a review conducted for any other purpose, such as in support of a potential M&A or IPO transaction.

- 2.8 **Financial Statements**—Reports on the financial position and the financial activities of an **entity**, prepared in accordance with accounting requirements prescribed or permitted by insurance regulators or accounting standards.
- 2.9 **Generally Accepted Auditing Standards**—Sets of standards promulgated by various standards-setting bodies by which audits or reviews are performed and against which the quality of audits or reviews may be judged.
- 2.10 **Responding Actuary**—An actuary who is authorized by the **entity** to respond to the **auditor** or **examiner** on behalf of the **entity** being audited, reviewed, or examined with respect to specified elements of the **entity's financial audit, financial review, or financial examination** that are based on actuarial considerations. Any given **financial audit, financial review, or financial examination** may involve one or more **responding actuaries**.
- 2.11 **Reviewing Actuary**—An actuary designated by the **auditor** or **examiner** to assist with the **financial audit, financial review, or financial examination** with respect to specified elements of the **financial audit, financial review, or financial examination** that are based on actuarial considerations. Any given **financial audit, financial review, or financial examination** may involve one or more **reviewing actuaries**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Scope and Planning for a Financial Audit, Financial Review, or Financial Examination**—The **reviewing actuary** should, to the extent practicable, review the scope and assist with the planning associated with actuarial work on a **financial audit, financial review, or financial examination**.
 - 3.1.1 **Understanding the Scope**—The **reviewing actuary** should understand the relevant aspects of the scope of the **financial audit, financial review, or financial examination** as well as the **auditor's** or **examiner's** expectations regarding the nature, extent, and timing of the **reviewing actuary's** procedures, including how the results will be communicated.
 - 3.1.2 **Informing the Responding Actuary**—The **reviewing actuary** should, to the extent practicable, inform the **responding actuary** about the scope and timing of the actuarial procedures and describe the type of information to be requested by the **reviewing actuary**.

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- 3.2 **Discussion between Responding Actuary and Entity**—The **responding actuary** should consider discussing the nature, format, and timing of the **responding actuary's** responses with the **entity** subject to the **financial audit**, **financial review**, or **financial examination**.
- 3.3 **Relationship with the Entity Whose Financial Statement is Being Audited, Reviewed, or Examined**—The **reviewing actuary** should disclose to the **auditor** or **examiner** any relationships with the **entity** whose **financial statement** is being audited, reviewed, or examined, or any relationship with the **entity**'s affiliates.
- 3.4 **Communication from Responding Actuary**—The **responding actuary** should be appropriately responsive to requests from the **auditor** or **examiner**, including the **reviewing actuary**, within the scope of the **financial audit**, **financial review**, or **financial examination**. The **responding actuary** may involve other individuals in responding to the **auditor** or **examiner**.
- 3.5 **Requests for Information**—The **reviewing actuary** and the **responding actuary** should cooperate in the compilation of the information needed by the **reviewing actuary** in order to perform the actuarial procedures. The **responding actuary** should also cooperate in the compilation of information requested by the **auditor** or **examiner** in order to perform the **financial audit**, **financial review**, or **financial examination**.
- 3.5.1 **Information Request Communication**—The **reviewing actuary** should communicate, preferably in writing, what information is requested by the **reviewing actuary** in order to perform the actuarial procedures. To the extent practicable, the **reviewing actuary** should communicate with the **entity** about the time frame within which the information is requested and work with the **entity** if there are conflicts or time frames that cannot be met. The **reviewing actuary** should consider whether the information requested is within the scope of the **financial audit**, **financial review**, or **financial examination**.
- 3.5.2 **Responding to Requests for Information**—In responding to requests for information, the **responding actuary** should consider the following:
- a. the extent to which the information requested is readily available;
 - b. if the information requested is not readily available, what other information is available or reasonably can be produced that can meet the **auditor's** or **examiner's** needs; and
 - c. whether the information requested is within the scope of the **financial audit**, **financial review**, or **financial examination**.

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To the extent practicable, the **responding actuary** should work with the **auditor** or **examiner** if there are conflicts or time frames that cannot be met.

- 3.5.3 Disagreement on Provision or Use of Information—In the event of disagreement between the **responding actuary** or the **entity** being audited, reviewed, or examined and the **reviewing actuary** regarding the information requested, the **reviewing actuary** should discuss the issue with the **auditor** or **examiner** and the **entity**.
- 3.5.4 Data, Assumptions, Methods, Models, and Controls—The **responding actuary** should be prepared to discuss with the **auditor** or **examiner**, including the **reviewing actuary**, the following items underlying those elements of the **financial statement** or other elements within the scope of the **financial audit**, **financial review**, or **financial examination** for which the actuary is the **responding actuary**:
- a. the data used;
 - b. the methods and assumptions used and judgments applied, and the rationale for those methods, assumptions, and judgments;
 - c. the source of any methods and assumptions not set by the **responding actuary**;
 - d. the models used;
 - e. the design and effectiveness of controls around the process, procedures, and models;
 - f. any significant risks to the **entity** considered by the **responding actuary**; and
 - g. the reasoning to support results and conclusions.
- 3.5.5 Changing Conditions—The **responding actuary** should be prepared to discuss with the **auditor** or **examiner** circumstances that, in the actuary's professional judgment, had or may have a significant effect on the preparation of those elements of the **financial statement** or other elements within the scope of the **financial audit**, **financial review**, or **financial examination** that are based on actuarial considerations. Examples of such circumstances may include the following:
- a. changes in the operating environment;

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- b. trends in experience;
 - c. product or plan changes and changes in product mix or demographic mix;
 - d. changes in the **entity's** policies or procedures, or in valuation bases; and
 - e. compliance with relevant new or revised accounting rules, laws and regulations, or other government promulgations.
- 3.5.6 **Confidentiality**—The **reviewing actuary** and the **responding actuary** should be aware that a **financial audit**, **financial review**, or **financial examination** may give rise to the exchange of confidential information. Such confidential information shall be handled consistent with Precept 9 of the Code of Professional Conduct.
- 3.6 **Documentation**—The **reviewing actuary** and the **responding actuary** may produce independent documentation appropriate for their respective teams or principals.
- 3.6.1 **Documentation of Findings by Reviewing Actuary**—The **reviewing actuary** should document findings from the actuarial procedures. The **reviewing actuary's** documentation should include the following:
- a. evidence that the **reviewing actuary's** procedures have been planned and coordinated with the **auditor** or **examiner**;
 - b. a summary description of the items subject to the **reviewing actuary's** actuarial audit, review, or examination procedures;
 - c. a summary description of the procedures followed by the **reviewing actuary**; and
 - d. a summary description of the results of the review, providing conclusions or findings.
- 3.6.2 **Documentation by Responding Actuary**—The **responding actuary** should consider documenting information provided to the **auditor** or **examiner**.

Section 4. Communications and Disclosures

- 4.1 **Communication and Disclosure**—Both the **reviewing actuary** and the **responding actuary** should comply with ASOP No. 41, *Actuarial Communications*. The **reviewing**

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actuary and the **responding actuary** should include the following, as applicable, in their actuarial communications:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

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Appendix 1

Background and Current Practices

Note: The following appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Financial Reporting Recommendation 2, *Relations with the Auditor*, was adopted in 1974 by the American Academy of Actuaries and revised in 1983. Recommendation 2 was limited in its application to audits in connection with financial statements of stock life insurance companies prepared in accordance with generally accepted accounting principles (GAAP). In 1993, Financial Reporting Recommendation 2 was replaced by ASOP No. 21, *The Actuary's Responsibility to the Auditor*, which expanded the scope of the existing standard to apply to any actuary who acts for any organization in the preparation or in the review of a financial statement or report that is expected to be audited by a public accounting firm retained by that organization. Financial Reporting Recommendation 3, *Actuarial Report and Statement of Actuarial Opinion for Stock Life Insurance Company Financial Statements Prepared in Accordance with GAAP*, also adopted in 1974 and revised in 1983, was withdrawn in 1993 because the Actuarial Standards Board (ASB) determined that it was no longer needed.

In 2002, the ASB decided that a revision of ASOP No. 21 was necessary because accounting and financial reporting had become increasingly complex since the original standard was issued and because audit issues had received increased attention in recent years. As a result, the version preceding this revision was adopted by the ASB in 2004.

Further expansion of the breadth of audits, reviews, and examinations of financial statements to include risk-focused components led the ASB to decide in 2014 that another revision of ASOP No. 21 was appropriate. Not only has the breadth changed but Sarbanes-Oxley and the Model Audit Rule have become part of the landscape for audits, reviews, and examinations.

The format has been revised to be consistent with the current format adopted by the ASB and reflects the adoption of other standards since ASOP No. 21 was last revised.

Current Practices

Actuaries routinely work with auditors and examiners when financial statements are being audited, reviewed, or examined. Financial statements generally include the statement of financial position (balance sheet), statement of comprehensive income, reconciliation of capital or surplus,

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statement of cash flows, and accompanying notes.

During the process of revising ASOP No. 21, some additional considerations arose that may provide helpful additional information, as discussed below.

An external auditor is an outside firm engaged and paid by the entity subject to the audit. Internal auditors are employed by the organizations they audit and are employed to give objective assurance to the organization that employs them in accordance with that entity's standards.

A number of organizations have developed sets of principles that represent generally accepted auditing standards and are intended to be encompassed in the definition of the phrase as used in this standard. In the United States, the final authority for the standards for public companies is the Public Companies Accounting Oversight Board (PCAOB), which in turn is subject to the oversight of the Securities and Exchange Commission (SEC). The standards setting body for other U.S. companies is the Auditing Standards Board, a division of the American Institute of Certified Public Accountants (AICPA). The Generally Accepted Government Auditing Standards, also known as the Yellow Book, is for use by auditors of government entities, entities that receive government awards, and other audit organizations performing Yellow Book audits. The International Federation of Accountants (IFAC), through the International Auditing and Assurance Standards Board (IAASB), sets the International Standards on Auditing (ISA). There are potentially other standards in various worldwide territories.

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Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations*, was issued in September 2015 with a comment deadline of December 31, 2015. Nineteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force carefully considered all comments received, and the General Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” includes the Task Force, General Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

TRANSMITTAL MEMORANDUM	
Question 1: Is the scope limitation to financial audits, financial reviews, and financial examinations clear and appropriate?	
Several commentators felt that the scope limitation to financial audits, financial reviews, and financial examinations was clear and appropriate.	
Comment	One commentator asked whether the ASOP was intended to cover financial reviews performed in M&A or IPO situations.
Response	The reviewers note that these financial reviews are not included in the financial reviews defined in this standard and added clarifying language in the definition of financial review.
Comment	One commentator stated that the scope limitation that precludes application of the ASOP to rate filings, tax returns, and other items involving actuarial considerations might not be appropriate.
Response	The reviewers believe this limitation is appropriate and made no change.
Comment	One commentator suggested adding the words “agreed-upon procedures” in conjunction with performing financial audits or financial reviews.
Response	The reviewers disagree that this ASOP should cover a more limited “agreed-upon procedures” engagement and made no change.
Comment	One commentator suggested adding wording in the transmittal letter to explain what elements are not necessary or appropriate for non-financial audits.
Response	The reviewers note that this ASOP does not apply to non-financial audits, reviews, or examinations and, therefore, does not provide guidance in those situations. Therefore, no change was made.

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Question 2: Does the proposed revision appropriately reflect the changes in financial audits, financial reviews, and financial examinations that have occurred since the current version of ASOP No. 21 was adopted in September 2004?

Several commentators felt that the proposed revision appropriately reflected the changes in financial audits, financial reviews, and financial examinations that have occurred since the current version of ASOP No. 21 was adopted in September 2004.

Comment	One commentator suggested more direct guidance to align with the Public Company Accounting Oversight Board's (PCAOB's) Staff Audit Practice Alerts (SAPAs).
Response	The reviewers note that while the SAPAs may apply to actuaries providing services in the audit of public companies, they may not apply to other actuarial practice areas and services covered by the ASOP and, therefore, may not be universally appropriate for inclusion in the ASOP. Therefore, no change was made.
Comment	One commentator suggested using a term different from “generally accepted auditing standards” and also including examinations and other assurance engagements in whatever term was used.
Response	The reviewers note that the term “generally accepted auditing standards” is purposefully not capitalized in the standard and can refer to a variety of auditing standards. Financial examinations are specifically defined separately as being “performed by an examiner.” Therefore, no change was made.
Comment	One commentator noted that the ASOP does not contain the word “risk” even though the revision is intended to look toward more risk focused exams.
Response	The reviewers agree and added section 3.5.4(f) to explicitly incorporate risk.

Question 3: Does the proposed revision accurately describe the responsibilities of the reviewing actuary and the responding actuary?

Several commentators felt the proposed revision accurately described the responsibilities of the reviewing actuary and the responding actuary.

Comment	One commentator suggested additional stronger language that directs the reviewing actuary to limit the information request only to the information required to review the work of the responding actuary.
Response	The reviewers believe that the guidance regarding request for information is appropriate and recognize that there can be differences of opinion about whether the information requested is required to review the responding actuary’s work. Section 3.5.3 addresses what steps the reviewing actuary should take if a disagreement arises. Therefore, no change was made.
Comment	One commentator suggested adding wording stating that the entity provides specific written authorization for the responding actuary to act in the capacity of responding actuary.
Response	The reviewers note that an ASOP cannot require an entity to do anything, whether in writing or not, but have changed the definition of responding actuary to note that the responding actuary is “authorized by the entity to respond.”
Comment	One commentator suggested requiring the responding actuary to have sufficient qualifications to perform the work and to be involved in actuarial communications.
Response	The reviewers note that an actuary must follow the Code of Professional Conduct (Code) in all areas and Precept 2 in particular addresses qualifications. Therefore, the reviewers made no change.

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Comment	One commentator suggested that it be made clearer that the ASOP applies to the reviewing actuary even if there is no responding actuary.
Response	The reviewers believe that there is nothing in the ASOP that would lead a reviewing actuary to believe that the ASOP did not apply if there was no responding actuary. However, changes were made in certain sections to note that the reviewing actuary may be communicating directly with the entity.
GENERAL COMMENTS	
Comment	One commentator believed that there should be more specific mention of Own Risk and Solvency Assessment (ORSA).
Response	The reviewers disagree because ORSA is only one component to a financial examination and is applicable only to insurance companies. Therefore, no change was made.
Comment	One commentator suggested that the order of audit, review, and examination be changed to audit, examination, and review, that is, in the order of the definitions.
Response	The reviewers note that the definitions in ASOPs are listed in alphabetical order, so that the ordering does not imply any relationships among the various definitions. Therefore, the reviewers made no change.
Comment	One commentator suggested a number of changes or additions to several sections that would add specific reference to a number of other ASOPs or require that the responding actuary state that various items followed various standards.
Response	The reviewers disagree with adding the references and made no change.
Comment	One commentator suggested that the exposure draft indicates that the responding actuary plays a role in determining the scope of an examination.
Response	The reviewers believe that the responding actuary's role is appropriately described and made no change.
Comment	One commentator suggested that input from a broader group of potential commentators should be sought, and specifically mentioned financial statement preparers, auditors, and examiners.
Response	The reviewers note that the ASB does proactively seek input from a broad range of potential commentators including those listed by the commentator, and it is up to those parties to respond.
Comment	One commentator suggested integrating guidance from a 2014 Request for Comment document entitled "ASOPs and Pension Plan Funding and Accounting."
Response	The reviewers disagree because the suggested document and comments submitted in response to it relate to a Request for Comment and do not provide guidance and, in addition, relate specifically to the pension practice while the standard applies to all practice areas.
Comment	One commentator questioned how ASOP No. 21 relates to Precept 13 of the Code and violations of the Code, and asked what a reviewing actuary should do if the reviewing actuary believes that the responding actuary has violated the Code.
Response	The reviewers note the Code applies to actuaries acting in a professional actuarial capacity. If a reviewing actuary believes that a responding actuary has violated the Code, the reviewing actuary should be guided by the Code.

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Comment	One commentator questioned whether the ASOP should formalize the interaction between the responding and reviewing actuaries where a prior examination exposed issues.
Response	The reviewers believe that the ASOP provides appropriate guidance and does not need to specify what occurs between responding and reviewing actuaries regarding prior examination issues. Therefore, no change was made.
Comment	One commentator asked what the obligation of the responding actuary is when someone other than the responding actuary (e.g., the principal) has set the assumptions, whether the assumptions are reasonable or not reasonable.
Response	The reviewers believe that the guidance in section 3.5.4 is sufficient for this circumstance and note that disclosure is also addressed in ASOP No. 41, <i>Actuarial Communications</i> . Therefore, no change was made.
Comment	One commentator suggested adding wording based on several Academy financial reporting committees' comments on the PCAOB's Staff Consultation Paper regarding the auditor's use of specialists.
Response	The reviewers believe that the suggested additional wording is too prescriptive. Therefore, no change was made.
Comment	One commentator suggested that the ASOP address the situation where a consulting actuary who was acting as a reviewing actuary uses confidential information to later gain a contract or employment with the entity that was audited or examined.
Response	The reviewers believe that the hypothetical situation posed by the commentator is addressed by reference to the Code and, therefore, made no change.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Section 1.2, Scope	
Comment	One commentator suggested changing the wording in the last sentence of the first paragraph from "is working to support" to "directly assists" the auditor or examiner.
Response	The reviewers agree with the wording change as the new wording may be more consistent with the terminology used by the auditor or examiner, and made the change.
Comment	One commentator suggested adding an example of one type of assistance that the internal auditor actuary might provide.
Response	The reviewers do not agree with adding the example, because the example given is limited in application. Therefore, no example was added.
Comment	One commentator recommended that the scope be clarified by adding a statement to the effect that the standard applies to a plan audit required to be attached to the Form 5500.
Response	The reviewers agree and added some clarifying language in section 1.2.

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SECTION 2. DEFINITIONS	
Section 2.1, Auditor	
Comment	One commentator proposed deleting the word “external” before the definition of “auditor” and suggested adding the word “qualified” in front of “professional.”
Response	The reviewers disagree with both suggestions. “External” is purposefully inserted in the revised definition because the application of the ASOP to actuaries who are employed in an internal audit function is limited, as described in section 1.2. The suggestion to add the word “qualified” before “professional” is not followed because it is assumed that actuaries who are providing services in an audit, review, or examination are qualified to do so in accordance with the Code. Therefore, no changes were made.
Section 2.2, Contract Performance	
Comment	One commentator suggested that the definition could be improved by adding “or experience refund” at the end of the definition as another example of contract performance.
Response	The reviewers agree that this additional example could add clarity for some practice areas and added the phrase.
Section 2.5, Financial Audit	
Comment	One commentator suggested that the term financial audit be defined to include both financial audits and financial reviews.
Response	The reviewers disagree because financial audits and financial reviews are different and this difference is important to auditors and appears in accounting literature. However, the reviewers modified the definition of financial review to clarify the differences.
Section 2.7, Financial Review	
Comment	One commentator suggested revising the definition of financial review to organize it in a similar way to the definition of financial audit but also to be clearer about the differences between a financial audit and financial review.
Response	The reviewers agree that a financial audit is similar to a financial review but also has some distinctly different characteristics that are important in the accounting profession. Therefore, the reviewers changed the wording to try to clarify the differences while also paralleling the structure of the financial audit definition.
Comment	One commentator suggested changing the word “company’s” in front of “internal controls” to “entity’s.”
Response	The reviewers agree and made the change.
Section 2.10, Responding Actuary	
Comment	One commentator suggested that the definition would be improved by adding the phrase “either internal or external to the entity” to the definition of “responding actuary.”
Response	The reviewers note that the definition states that the responding actuary is acting “on behalf of the entity...,” which covers actuaries who are internal or external to the entity. Therefore, the reviewers made no change.
Comment	One commentator suggested a change in the definition to read “the responding actuary is the actuary whose principal is the entity being audited, reviewed, or examined.”
Response	The reviewers disagree and made no change.

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Comment	One commentator suggested that because there may in actual circumstances be no responding actuary, the standard should either give a respondent who is not an actuary direction and include that respondent as being covered by the standard, or alternatively or additionally, say that there should always be a responding actuary.
Response	The reviewers disagree with both suggestions. First, ASOPs can only apply to actuaries even if non-actuaries are performing actuarial-type work. Similarly, the ASB cannot require an entity to employ or involve an actuary to perform actuarial-type work. Therefore, the reviewers made no change.

Section 2.11, Reviewing Actuary

Comment	One commentator suggested that the definition of reviewing actuary be “the actuary whose principal is the auditor or examiner.”
Response	The reviewers disagree with the change in wording, since the suggested change could erroneously indicate that any actuary whose principal is the auditor or examiner would be a reviewing actuary. Therefore, the reviewers made no change.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 3.1, Scope and Planning for a Financial Audit, Financial Review, or Financial Examination

Comment	One commentator suggested adding the words “and materiality” to the scope.
Response	The reviewers disagree, noting that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , provides that the guidance in ASOPs need not be applied to immaterial items, and made no change.

Section 3.1.1, Understanding the Scope

Comment	One commentator suggested that an additional section be added to section 3.1.1, which addresses planning. Suggested additional wording is “The reviewing actuary should plan actuarial procedures consistent with the scope of the financial audit, financial review, or financial examination. These procedures should be provided to and discussed with the auditor or examiner prior to performing the procedures.”
Response	The reviewers disagree with this suggestion because it fails to recognize that the reviewing actuary is not always involved or able to be involved in planning the audit, review, or examination. The current wording states “the reviewing actuary should, to the extent practicable, … assist with the planning....” Therefore, no change was made.

Section 3.1.2, Informing the Responding Actuary

Comment	One commentator said that the section wording should suggest that the communication be in writing.
Response	The reviewers disagree with the suggestion. This section recognizes that it is not always practicable for the reviewing actuary to inform the responding actuary about the scope and timing. The reviewers do not feel it is appropriate to expand the communication requirements and, therefore, made no change.
Comment	Several commentators suggested that wording be added to specifically address that there may be no direct communication between the reviewing and responding actuaries.
Response	The reviewers disagree and believe that the wording “to the extent practicable” appropriately recognizes that there may be no direct communication between the reviewing and responding actuaries. Therefore, no change was made.

Section 3.2, Discussion between Responding Actuary and Entity

Comment	One commentator suggested clarification on the relationship of the responding actuary to the entity.
Response	The reviewers disagree that any clarification is needed and believe that the definition of responding actuary is clear. Therefore, no change was made.

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Comment	One commentator said that this section was vague and did not understand when the responding actuary would not discuss responses with the entity.
Response	The reviewers disagree that any change is needed. The wording reflects that there may be a number of reasons that the responding actuary is not able to discuss responses directly with the entity, and therefore, allows for flexibility. Therefore, no change was made.
Section 3.3, Relationship with the Entity Whose Financial Statement is Being Audited, Reviewed, or Examined	
Comment	Several commentators suggested that the disclosure of relationships should apply to the responding actuary as well as the reviewing actuary.
Response	The reviewers disagree with adding responding actuary to the relationship disclosure because the responding actuary always has a relationship to the entity (i.e. employment). Therefore, no change was made.
Comment	One commentator suggested adding “or its affiliates” after “entity.”
Response	The reviewers agree and changed the wording.
Section 3.4, Communication from Responding Actuary	
Comment	One commentator suggested (re)inserting the word “reasonable” in front of “requests,” as in the corresponding section 3.1 of the current ASOP No. 21.
Response	The reviewers note that section 3.4 directs the responding actuary to be “appropriately responsive” and, therefore, made no change.
Comment	One commentator suggested that clarification is needed on the issue of the responding actuary involving other individuals in responding to the auditor or examiner, and notes that the issue seems to be control of the work product or communication.
Response	The reviewers disagree that clarification is needed and, therefore, made no change.
Section 3.5, Requests for Information	
Comment	One commentator suggested that this section refer to ASOP No. 41.
Response	The reviewers disagree and note that ASOP No. 41 applies to actuarial communications of the results of a work product, while section 3.5 is discussing communications among the reviewing actuary, the auditor or examiner, and the responding actuary that are necessary for the performance of actuarial procedures, not for communicating the results of a work product. Therefore, no change was made.
Comment	One commentator suggested replacing “needed by the reviewing actuary...” to “needed by the auditor or examiner team....”
Response	The reviewers agree that the information may be requested by the auditor or examiner in addition to or instead of the reviewing actuary and added a second sentence noting that the “responding actuary should also cooperate in the compilation of information requested by the auditor or examiner....”
Comment	One commentator suggested adding the sentence “Information requests may be made to the responding actuary by the auditor or examiner, including the reviewing actuary.”
Response	The reviewers agree that the responding actuary may be responding to the auditor or examiner and added a second sentence to section 3.5 as noted above.

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Section 3.5.1, Information Request Communication	
Comment	One commentator suggested that information requested should include the level of granularity of information requested.
Response	The reviewers disagree that this specificity needs to be added and made no change.
Comment	Several commentators suggested substituting “the entity” for “the responding actuary” where “the responding actuary” appears in section 3.5.1, or other additions to wording that would accomplish the same result as this suggested change.
Response	The reviewers agree with the suggestion and made the change.
Comment	One commentator provided a rewrite of section 3.5.1, which listed substantial detail on what should be included in the request for information.
Response	The reviewers note that the basic ideas in the suggested rewrite were already in the exposure draft. However, the suggested wording is very prescriptive and may not work in all situations and for all practice areas, and for both audits and examinations. The reviewers believe the current guidance is appropriate and made no change.
Section 3.5.2, Responding to Requests for Information	
Comment	One commentator posed a hypothetical situation regarding the need or requirement that the responding actuary disclose information that is new and not directly part of the information requested by the auditor or examiner, and asked that this situation be addressed somewhere in the ASOP.
Response	The reviewers do not believe that all potential situations can be addressed in the ASOP but refer the commentator to the first sentence of section 3.5 and the Code regarding cooperation. Therefore, no change was made.
Comment	One commentator noted that the term “requester” was used and suggested it be replaced with “auditor or examiner.”
Response	The reviewers agree and changed the term “requester” to “auditor or examiner.”
Comment	One commentator provided a rewrite of section 3.5.2, which listed substantial detail on what should be included in the response to requests for information.
Response	The reviewers note that the basic ideas in the suggested wording are in the exposure draft. However, the suggested wording is very prescriptive and may not work in all situations and for all practice areas, and for both audits and examinations. The reviewers believe the current guidance is appropriate and made no change.
Comment	One commentator suggested clarifying that the responding actuary can only respond to the reviewing actuary’s or auditor’s or examiner’s requests for information to the extent that the entity has authorized the actuary to respond.
Response	The reviewers modified the definition of responding actuary in section 2.10 to make clearer that the responding actuary is authorized to respond.

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Comment	One commentator objected to section 3.5.2(c), which states that the responding actuary should consider “whether the information requested is within the scope of the financial audit, financial review, or financial examination.” The commentator indicated that it is outside of the responding actuary’s area of expertise to know whether the information requested is within the scope of the audit, review, or examination.
Response	The reviewers believe the guidance is appropriate and refer the commentator to section 3.5.3 for guidance in situations where there is a disagreement on the provision or use of information. Therefore, the reviewers made no change.

Section 3.5.3, Disagreement on Provision or Use of Information

Comment	One commentator suggested clarifying that there might be no opportunity for direct communication between the responding actuary and reviewing actuary.
Response	The reviewers made some changes to the wording to clarify guidance.
Comment	One commentator suggested either deletion or expansion of this section. The argument for deletion is that the Code applies and the section does not add information or guidance. The argument for expansion is that there needs to be more specific direction about what happens in the event that information the reviewing actuary believes needs to be provided is not provided.
Response	The reviewers disagree and believe the level of guidance given is appropriate. Therefore, no change was made.

Section 3.5.4, Data, Assumptions, Methods, Models and Controls

Comment	One commentator suggested that wording be added indicating that it is preferable for the responding actuary to respond in writing to requests for information.
Response	The reviewers disagree and believe that “responding in writing” is too vague (i.e. what constitutes a “writing” that is universally applicable) to be useful and may not apply to all practice areas and in all situations. Therefore, the reviewers made no change.
Comment	One commentator suggested additional wording in subsections (h), (i), and (j) as follows: h. adjustment to values calculated outside of actuarial models; i. background information to assist the reviewing actuary to fairly assess the reliability of the audited value e.g. the level of uncertainty in management estimates, model quality, and other qualitative factors; and j. model validations.
Response	The reviewers disagree with the additional wording suggestions, believing the current wording is appropriately broad and encompasses the additional specific suggestions. Therefore, no change was made.
Comment	One commentator suggested that the standard should require the responding actuary to prepare a set of work papers that “support the balance sheet.” Further, the commentator suggested that the standard require the entity to identify the responding actuary at the beginning of the audit/exam and that this person should prepare the initial package, that is, the set of work papers to support the audit/exam.
Response	The reviewers disagree with the first suggestion as being too prescriptive and not applicable to all situations and practice areas. The reviewers disagree with the second suggestion because it directs the entity to do something, which is outside the purview of an ASOP. Therefore, no change was made.

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Comment	One commentator suggested either eliminating section (d), which referred to the source of methods and assumptions not set by the responding actuary, or just eliminating the phrase “not set by the responding actuary.”
Response	The reviewers disagree with both suggestions and made no change. The reviewers believe that Section 3.5.4(c) in this final ASOP is important to address the methods and assumptions not set by the responding actuary.
Comment	One commentator suggested adding language that requires the information provided by the responding actuary to be complete enough that the reviewing actuary can “sample-test” the appropriateness of assumptions, methodology, or accuracy of calculations.
Response	The reviewers disagree because the additional language is overly prescriptive and does not apply to all practice areas. Therefore, no change was made.
Comment	Several commentators suggested that an item be added saying that the responding actuary should be prepared to discuss perceived or significant risks to the business.
Response	The reviewers agree with the idea of adding an item of risk to the list and added “f. any significant risks to the entity considered by the responding actuary.”
Comment	One commentator suggested that the phrase “and changes in methods used” be added to section (c).
Response	The reviewers combined sections (c) and (b), and believe that the guidance regarding “being prepared to discuss...the rationale for those methods...” includes discussion of changes in methods.
Section 3.5.5, Changing Conditions	
Comment	One commentator suggested adding the following wording after sections (a) through (e) as follows: f. inherent and residual risk assessments; g. design and effectiveness of financial controls; h. the existence and potential resolution of any material weaknesses, significant deficiencies, or high risk deficiencies.
Response	The reviewers believe that the suggestions made are more appropriate to section 3.5.4, and added an additional item discussing risk as section (f) and added the phrase “design and effectiveness of” before “controls” in section (e).
Comment	One commentator suggested removing “statutory” because the point applies to all valuation bases.
Response	The reviewers note that “statutory” refers to any valuation basis set by statute, but removed it as the word is not essential.
Comment	One commentator suggested changing the phrase “significant effect” to one that refers to an impact over a materiality limit.
Response	The reviewers disagree and note that the language refers to circumstances that, “in the actuary’s judgment,” had or may have a significant effect. Therefore, no change was made.
Comment	One commentator suggested that the wording under 3.5.5(e) on compliance with relevant new or revised accounting rules or laws should include Actuarial Guidelines developed by the National Association of Insurance Commissioners.
Response	The reviewers disagree and note that Actuarial Guidelines fit into the category of government promulgations. Therefore, no change was made.

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Comment	One commentator agreed that the responding actuary should be prepared to discuss circumstances that had a significant effect on the preparation of the information being audited, reviewed, or examined but did not agree with the wording “...or may have a significant effect...” as the commentator felt this required discussion of future scenarios of events.
Response	The reviewers believe that the guidance is appropriate and made no change.
Section 3.5.6, Confidentiality	
Comment	Several commentators suggested reinserting language from the current ASOP that says “any information received by the reviewing actuary should be considered confidential...unless otherwise indicated by the entity.”
Response	In order to avoid any confusion, the guidance was changed to refer directly to Precept 9 of the Code.
Comment	One commentator asked that more be said about “may give rise to the exchange of confidential information” but made no specific suggestion.
Response	The reviewers disagree that additional explanation is needed and made no change.
Section 3.6, Documentation	
Comment	Two commentators asked why the reviewing actuary should document but the responding actuary should only consider documenting.
Response	The reviewers do not believe any change is needed because the act of reviewing is part of the work product of the reviewing actuary, but the act of responding is not necessarily part of the work product of the responding actuary. The responding actuary may only be providing supporting information for preexisting work. Therefore, the reviewers believe the documentation requirements should be different. Therefore, no change was made.
Section 3.6.1, Documentation of Findings by Reviewing Actuary	
Comment	One commentator suggested adding wording to indicate that it is the responsibility of the responding actuary to comment on any report received from the reviewing actuary as described in 3.6.1(d).
Response	The reviewers disagree with the suggested change and note that in many instances, the findings of a reviewing actuary are not provided to the responding actuary. The reviewers believe that putting requirements on the responding actuary to respond to the reviewing actuary’s report is not appropriate. Therefore, no change was made.
Comment	One commentator suggested adding guidance on standards that reviewing actuaries need to meet to be qualified to perform or assist in an audit or examination.
Response	The reviewers do not believe that guidance on qualifications is appropriate in this standard and refer the commentator to the U.S. Qualification Standards. Therefore, no change was made.
Comment	One commentator suggested that the reviewing actuary should comment on whether the responding actuary is following the professional standards of practice.
Response	The reviewers disagree with this suggestion and note that actuaries should always be following actuarial standards of practice. Therefore, no change was made.
Comment	One commentator suggested that the reviewing actuary should comment specifically on what items are not reviewed.
Response	The reviewers disagree with this suggestion as being too open-ended and practically impossible to meet. Therefore, no change was made.

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Section 3.6.2, Documentation by Responding Actuary	
Comment	One commentator suggested that the term “requester” be changed.
Response	The reviewers agree and changed the term “requester” to “auditor or examiner.”
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Communication and Disclosure	
Comment	One commentator suggested changing “when communicating information and findings” to “when communicating actuarial opinions and actuarial findings” to agree with ASOP No. 41.
Response	The reviewers have simplified this sentence in section 4.1 and it now simply indicates that “Both the reviewing actuary and the responding actuary should comply with ASOP No. 41, <i>Actuarial Communications</i> .”



**Actuarial Standard
of Practice
No. 22**

Revised Edition

**Statements of Actuarial Opinion Based on Asset Adequacy Analysis
for Life Insurance, Annuity, or Health Insurance Reserves and
Other Liabilities**

**Developed by the
Task Force to Revise ASOP No. 22 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2021**

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September 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Statements of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities

FROM: Actuarial Standards Board (ASB)

SUBJ: Proposed Revision of Actuarial Standard of Practice (ASOP) No. 22, *Statements of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities*

This document contains a revision of ASOP No. 22, now titled *Statements of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities*.

History of the Standard

In 1993, the ASB adopted ASOP No. 22, *Statutory Statements of Opinion Based on Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, which replaced Financial Reporting Recommendation No. 7, *Statement of Actuarial Opinion for Life Insurance Company Statutory Annual Statements*, and No. 11, *Statement of Actuarial Opinion for Interest-Indexed Universal Life Insurance Contracts*, as guidance for opinions under section 8 of the model Actuarial Opinion Memorandum Regulation (1991).

Prior to the adoption, there had been discussions about whether ASOP No. 22 should cover opinions under both section 7 and section 8 of the model regulation. The ASB decided to limit ASOP No. 22 to cover opinions required under only section 8 and adopted Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, in October 1993 to provide guidance on opinions required under section 7. At the time of this revision to ASOP No. 22, ACG No. 4 continues to be relevant for actuaries working for companies that receive an exemption from asset adequacy analysis.

In the late 1990s and early 2000s, the ASB reviewed all standards of practice related to cash flow testing. Portions of ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, were incorporated into ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, and ASOP No. 22. In 2001, the ASB adopted the revised ASOP No. 7 and ASOP No. 22 and repealed ASOP No. 14.

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In December 2012, the National Association of Insurance Commissioners (NAIC) initially adopted the *Valuation Manual*, which sets forth the minimum reserve and related requirements for jurisdictions where the *Standard Valuation Law*, as amended by the NAIC in 2009, has been enacted. The *Valuation Manual* took effect on January 1, 2017, pursuant to section 11 of the *Standard Valuation Law*. Requirements for the annual actuarial opinion and memorandum pursuant to section 3 of the *Standard Valuation Law* are provided in “VM-30, Actuarial Opinion and Memorandum Requirements.” In December 2017, the NAIC also adopted Actuarial Guideline LI, *The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves*, which provides uniform guidance and clarification of requirements for asset adequacy testing for long-term care insurance.

In response to these NAIC activities, the ASB decided to revise this ASOP.

First Exposure Draft

The first exposure draft was approved by the ASB in December 2018 with a comment deadline of June 1, 2019. Fourteen comment letters were received and considered in making changes that are reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was approved by the ASB in March 2020 with a comment deadline of November 30, 2020. Eight comment letters were received and considered in making changes that are reflected in this standard.

For a summary of issues contained in these comment letters, please see appendix 2.

Notable Changes from the Second Exposure Draft

Notable changes made from the second exposure draft to the final standard are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Modified the definition of subsequent events in section 2.11.
2. Added references to ASOP Nos. 23, 25, and 56 in sections 3.1.2.1, 3.1.12, and 4.1, as appropriate.
3. Modified the discount rates language in section 3.1.2.3.
4. Added item (e) on reflecting in-force management actions in asset adequacy testing in section 3.1.7.
5. Added a disclosure for discount rates in section 4.1(h).

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Notable Changes from the Existing ASOP

A cumulative high-level summary of the notable changes from the existing ASOP are summarized below.

1. Changed the purpose, scope, and title from applying to actuaries when providing a statement of actuarial opinion for life and health insurers to applying to actuaries when providing a statement of actuarial opinion relating to asset adequacy analysis of life insurance, annuity, or health insurance reserves and other liabilities.
2. Added sections to provide guidance on the following:
 - trends in assumptions (section 3.1.2.1);
 - assumption margins (section 3.1.2.2);
 - discount rates (section 3.1.2.3);
 - sensitivity testing (section 3.1.2.4);
 - reinsurance ceded (section 3.1.3);
 - the use of cash flows from other financial calculations (section 3.1.5);
 - separate account assets (section 3.1.6); and
 - changes in methods, models, or assumptions (section 3.1.10).
3. Significantly revised the management action section (section 3.1.7).
4. Strengthened documentation requirements (section 3.4).
5. Modified disclosure items (section 4).

The ASB is currently converting Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life and Health Insurers*, into an ASOP. ACG No. 4 will remain in effect until the ASOP is adopted to continue providing guidance to actuaries issuing opinions not including an asset adequacy analysis.

The ASB wishes to thank everyone who took the time to contribute comments and suggestions to the exposure drafts, and in particular offers special thanks to John MacBain and Martin Snow, previous members of the ASOP No. 22 Task Force who contributed to earlier drafts.

The ASB voted in September 2021 to adopt this standard.

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Task Force to Revise ASOP No. 22

Laura A. Hanson, Chairperson	
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Life Committee of the ASB

Linda M. Lankowski, Chairperson	
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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 22

**STATEMENTS OF ACTUARIAL OPINION BASED ON
ASSET ADEQUACY ANALYSIS OF LIFE INSURANCE, ANNUITY, OR
HEALTH INSURANCE RESERVES AND OTHER LIABILITIES**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to providing a statement of actuarial opinion relating to **asset adequacy analysis** of life insurance, annuity, or health insurance reserves and other **liabilities**, pursuant to applicable law (statutes, regulations, and other legally binding authority).
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to providing a statement of actuarial opinion based on **asset adequacy analysis** of life insurance, annuity, or health insurance reserves and other **liabilities**, under the following circumstances:
 - a. the statement of actuarial opinion is prepared to comply with applicable law based on the model *Standard Valuation Law* and VM-30 of the NAIC *Valuation Manual*; or
 - b. the statement of actuarial opinion is prepared for an insurance company to comply with other applicable law.

If the statement of actuarial opinion encompasses health insurance **liabilities**, ASOP No. 28, *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities*, may also apply. If the statement of actuarial opinion includes reinsurance, ASOP No. 11, *Treatment of Reinsurance or Similar Risk Transfer Programs Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports*, may also apply.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law, or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

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- 1.4 **Effective Date**—This standard is effective for all statements of actuarial opinion covered by the scope of this ASOP issued on or after June 1, 2022.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Asset**—Any resource that can generate revenue **cash flows** or reduce disbursement **cash flows**.
- 2.2 **Asset Adequacy Analysis**—An analysis of the adequacy of reserves and other **liabilities** being tested, in light of the **assets** supporting such reserves and other **liabilities**, as specified in the statement of actuarial opinion.
- 2.3 **Cash Flow**—Any receipt, disbursement, or transfer of cash or **asset** equivalents; includes policy **cash flows** and **cash flows** that are not policy related, such as **cash flows** from **assets**, corporate expenses, and litigation costs.
- 2.4 **Cash Flow Risk**—The risk that the amount or timing of **cash flows** will differ from expectations or assumptions.
- 2.5 **Cash Flow Testing**—The projection and comparison of the timing and amount of **cash flows** under one or more **scenarios** in order to evaluate **cash flow risks**.
- 2.6 **Gross Premium Reserve**—The actuarial present value of future benefits, expenses, and related amounts less the actuarial present value of future gross premiums and related amounts.
- 2.7 **Gross Premium Reserve Test**—The comparison of the **gross premium reserve** computed under one or more **scenarios** to the financial statement reserves and other **liabilities**.
- 2.8 **Liability**—Any commitment by, or requirement of, an insurer that can reduce revenue **cash flows** or generate disbursement **cash flows**.
- 2.9 **Moderately Adverse Conditions**—Conditions that include one or more unfavorable, but not extreme, events that have a reasonable probability of occurring during the testing period.
- 2.10 **Scenario**—A set of economic and other assumptions used in **asset adequacy analysis**.
- 2.11 **Subsequent Events**—Material events that occur after the valuation date and before the date the statement of actuarial opinion is signed.

Section 3. Analysis of Issues and Recommended Practices

3.1 **Asset Adequacy Analysis**—When performing an **asset adequacy analysis**, the actuary should choose a block of **assets** such that the statement value of those **assets** is no greater than the statement value of the reserves and other **liabilities** being tested. The actuary should determine whether additional **assets** are needed to support the reserves and other **liabilities** being tested under **moderately adverse conditions**. If the actuary determines that additional **assets** are needed, then the actuary should establish an additional reserve equal to the statement value of those additional **assets** and test that the total **assets**, including the additional **assets**, are adequate to support the reserves and other **liabilities** under **moderately adverse conditions**.

The actuary should use professional judgment in choosing **assets** that are appropriate for the analysis method and are not used to support reserves and other **liabilities** other than those being tested by the actuary. The actuary should take into account the types and associated risks of the **assets** and **liabilities** in the **asset adequacy analysis**.

3.1.1 **Analysis Methods**—The actuary should use professional judgment in choosing an appropriate analysis method. The actuary may use a single method of analysis for all reserves and other **liabilities** or a number of different methods of analyses for each of several blocks of business.

The actuary should consider using **cash flow testing** and should refer to ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*. **Cash flow testing** is generally appropriate where **cash flows** vary under different economic scenarios.

The actuary may consider using analysis methods other than **cash flow testing** to evaluate the adequacy of the **assets** to support the reserves and other **liabilities** being tested. The following are examples of other analysis methods:

- a. **Gross Premium Reserve Test**—A **gross premium reserve test** may be appropriate when the testing would emphasize the sensitivity of **cash flows** arising from **liabilities** under **moderately adverse conditions**. For example, this type of method may be appropriate for term insurance backed by noncallable bonds.
- b. **Demonstration of Conservatism**—A demonstration of conservatism may be appropriate when the degree of conservatism in the reserves and other **liabilities** is so great that the **cash flows** are covered under **moderately adverse conditions**. For example, this type of method may be appropriate for a block of accidental death and dismemberment insurance if that block is reserved using conservative interest rates and mortality/morbidity tables.
- c. **Demonstration of Immaterial Variation**—A demonstration that the risks are not subject to material variation may be appropriate when the **cash flow**

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risks have been limited by product design and the investment strategy. For example, this type of method may be appropriate for a non-life contingent payout annuity backed by a **cash flow** matched **asset** portfolio.

- d. **Risk Theory Techniques**—Analysis using risk theory techniques may be appropriate when the risks inherent in products with short-duration **liabilities** are supported by short-duration **assets**. Such techniques can be used to measure **cash flows** for risks that are subject to large fluctuations that arise infrequently since the **cash flows** arising from **liabilities** can rarely be matched to the **cash flows** arising from **assets** under **moderately adverse conditions**. For example, this method may be appropriate for risks involving a small number of large individual claims over a short period, such as catastrophe or stop loss coverage.
- e. **Loss Ratio Methods**—Loss ratio methods may be appropriate when the **cash flows** are of short duration. Under these methods, morbidity or mortality costs may be tested under **moderately adverse conditions**. For example, these methods may be appropriate for certain short-term disability coverages.

3.1.2 **Assumptions**—The actuary should choose assumptions that are appropriate for the analysis.

3.1.2.1 **Trends**—The actuary should consider reflecting anticipated trends in the assumptions. When determining the level of trend to apply, if any, the actuary should take into account the following:

- a. whether different trends should be used for different types of business. For example, mortality improvement may be different between life and annuity products;
- b. the source and credibility of the data from which the assumptions are derived (for further guidance, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 25, *Credibility Procedures*). For example, different trends may be appropriate when using company experience vs. industry studies; and
- c. the impact of trends on **cash flows**. For example, the effect of future economic conditions on policyholder elections.

3.1.2.2 **Margins**—The actuary should consider including margins in assumptions to reflect adverse deviation. When determining the level of assumption margins, if any, the actuary should take into account the following:

- a. the level of uncertainty for the assumption, including sparsity of data;

- b. the degree of adverse deviation covered by the margin;
 - c. whether the margins vary over time;
 - d. whether individual margins or aggregate margins are used in the analysis;
 - e. the interaction between assumptions, including the overall impact of margins; and
 - f. the possibility that more than one adverse condition could occur at one time.
- 3.1.2.3 **Discount Rates**—When using an analysis method that requires the use of discount rates, the actuary should choose discount rates that are consistent with the yield on **assets** chosen for the analysis, any investment strategy used in the analysis, and the testing horizon used in the analysis.
- 3.1.2.4 **Sensitivity Testing of Assumptions**—In setting assumptions and assumption margins, the actuary should consider performing sensitivity testing of how variations in an assumption or combinations of assumptions affect the **asset adequacy analysis** results.
- 3.1.3 **Reinsurance Ceded**—The actuary should consider reflecting reinsurance ceded **cash flows** in the **asset adequacy analysis** regardless of whether the analysis is performed for a direct writing company or a reinsurer. In deciding whether and how to reflect the reinsurance ceded **cash flows**, the actuary should solicit information from management regarding the extent of reinsurance, the associated **cash flows**, their collectability, any disputes with reinsurers, and practices regarding provisions for reinsurance ceded. The actuary’s consideration of reinsurance ceded does not imply an opinion on the financial condition of any reinsurer.
- 3.1.4 **Aggregation During Testing**—When performing an **asset adequacy analysis**, the actuary may aggregate reserves and other **liabilities** for multiple blocks of business if the **assets** or **cash flows** from the blocks are available to support the reserves and other **liabilities** of the aggregated blocks of business. When performing this aggregation, the actuary should not use **assets** or **cash flows** from one block of business to discharge the reserves and other **liabilities** of another block of business if those **assets** or **cash flows** cannot be used for that purpose.
- 3.1.5 **Use of Cash Flows from Other Financial Calculations**—If the actuary uses **cash flows** from other financial calculations (for example, principle-based reserve or capital models) in the **asset adequacy analysis**, the actuary should take into account any differences between the **cash flows** in the financial calculations and the **asset adequacy analysis** due to items such as the following:

- a. starting **assets**;
- b. assumptions, including margins;
- c. sensitivities;
- d. any interim shortfalls in accumulated **cash flows**;
- e. any requirements for the aggregation of results that are specified by applicable law;
- f. distribution of surplus; and
- g. taxes.

If the actuary uses **cash flows** from other financial calculations, the actuary should confirm that the assumptions underlying these **cash flows** are appropriate for an **asset adequacy analysis** under **moderately adverse conditions**.

- 3.1.6 **Separate Account Assets**—When separate account business is included in the analysis, the actuary may include separate account **assets** in excess of separate account reserves and other **liabilities**. This treatment would result in fewer general account **assets** being used in the analysis than if the separate account business had been excluded.

The actuary should determine whether it is appropriate to use **cash flows** from separate account **assets** to support reserves and other **liabilities** that are not associated with the separate account. When making the determination, the actuary should take into account any legal restrictions, such as separate account **assets** that are not chargeable with **liabilities** arising out of any other business under state law.

- 3.1.7 **Management Action**—When reflecting in-force management actions in the **asset adequacy analysis**, the actuary should take into account the following:

- a. the insurer's capacity and intent to take such actions;
- b. the insurer's documented procedures and historical practice;
- c. the policy provisions;
- d. whether other assumptions, such as policyholder behavior assumptions, are reasonable in light of the actions;
- e. whether there are impediments to the implementation timeline, such as the need to obtain regulatory approval or process limitations; and

- f. whether the actions are reasonable and comply with applicable law.

The actuary should consider quantifying the impacts of these actions as part of the analysis.

- 3.1.8 **Use of Data or Analyses Predating the Valuation Date**—If appropriate, the actuary may use data or analyses predating the valuation date. When using data or analyses prior to the valuation date, the actuary should take into account the reasonableness of such prior period data, studies, analyses, or methods; whether key assumptions are still appropriate; and whether any material events have occurred prior to the valuation date that would invalidate the **asset adequacy analysis** on which the statement of actuarial opinion is based.

Examples of data or analyses an actuary may use include:

- a. data taken from a time that predates the valuation date, such as data from September 30 to support a December 31 valuation;
- b. an **asset adequacy analysis** performed prior to the valuation date;
- c. an analysis performed at the time of policy issue; and
- d. prior analysis of a closed block of business.

- 3.1.9 **Testing Horizon**—The actuary should perform an **asset adequacy analysis** over a period that extends to a point at which, in the actuary’s professional judgment, the use of a longer period would not materially affect the results of the analysis.

- 3.1.10 **Changes in Methods, Models, or Assumptions**—If the methods, models, or assumptions differ from those in the prior statement of actuarial opinion, the actuary should consider quantifying the impacts of these changes.

The use of new methods, models, or assumptions for new **liability** segments (for example, a new line of business or product) or new **asset** amounts is not a change within the meaning of this section.

- 3.1.11 **Completeness**—When performing the **asset adequacy analysis**, the actuary should take into account anticipated material **cash flows** such as renewal premiums, guaranteed and nonguaranteed benefits and charges, expenses, and taxes. In determining the **assets** supporting the tested reserves and other **liabilities**, the actuary should take into account any **asset** segmentation system used by the company.

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The actuary should confirm that the total amount of any reserves and other **liabilities** reported as “not analyzed” is immaterial.

- 3.1.12 **Reliance on Others for Data, Projections, and Supporting Analysis**—The actuary may rely on data, projections, and supporting analysis supplied by others. When practicable, the actuary should review the data, projections, and supporting analysis for reasonableness and consistency. For further guidance, the actuary should refer to ASOP No. 23, ASOP No. 41, *Actuarial Communications*, and ASOP No. 56, *Modeling*. The actuary should disclose the extent of any such reliance.
- 3.1.13 **Subsequent Events**—The actuary should make a reasonable effort to be informed about **subsequent events**.
- 3.2 **Forming an Opinion with Respect to Asset Adequacy Analysis**—When forming an opinion with respect to **asset adequacy analysis**, the actuary should follow the guidance below.
 - 3.2.1 **Reasonableness of Results**—The actuary should review the modeled future economic and experience conditions and test results for reasonableness.
 - 3.2.2 **Adequacy of Reserves and Other Liabilities**—The actuary should determine whether the reserves and other **liabilities** being tested are adequate under **moderately adverse conditions**, in light of the **assets** supporting such reserves and other **liabilities**. The actuary should recognize that holding reserves or other **liabilities** so great as to withstand any conceivable circumstance, no matter how adverse, may imply an excessive level of reserves or other **liabilities**.
 - 3.2.3 **Analysis of Scenario Results**—If the supporting **assets** are insufficient to meet the reserves and other **liabilities** under a **scenario**, the actuary should consider whether further analysis is required. However, this situation does not necessarily mandate additional reserves or other **liabilities**. Further analysis may indicate that current reserves and other **liabilities** are adequate. For example, if a large number of **scenarios** were run, the failure of a small percentage of them may not indicate the need for additional reserves or other **liabilities**.
 - 3.2.4 **Aggregation of Results**—If business segments are modeled separately, the actuary may consider offsetting deficiencies in one business segment with sufficiencies in another business segment for the purposes of reporting and documenting the results of testing. When considering aggregation of results to offset deficiencies, the actuary should take into account the type and timing of **cash flows**, the related **cash flow risks**, and the comparability of elements of the analysis such as analysis methods, **scenarios**, discount rates, and sensitivity of assumptions.
 - 3.2.5 **Results from Prior Years**—The actuary should consider analyzing the results over time and reconciling the results from prior years.

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- 3.2.6 **Opinions of Other Actuaries**—When more than one actuary contributes to the **asset adequacy analysis**, the opining actuary should form an overall opinion without claiming reliance on the opinions of other actuaries.
- 3.2.7 **Deficiencies**—The actuary should be aware of any deficiencies or limitations in the data, analyses, assumptions, or related information used in the **asset adequacy analysis**.
- 3.3 **Statement of Actuarial Opinion Based on Asset Adequacy Analysis**—The actuary should follow the form, content, and recommended language of the statement of actuarial opinion, as specified by applicable law. The actuary should identify the intended purpose of the statement of actuarial opinion. The actuary should include a statement on the adequacy of reserves and other **liabilities** based on an **asset adequacy analysis**, the details of which are contained in the supporting memorandum.
- 3.4 **Documentation**—The actuary should prepare and retain documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, including statements of actuarial opinion, regulatory asset adequacy issues summaries (RAAISs), and supporting memoranda, the actuary should refer to ASOP Nos. 7, 11, 23, 25, 28, 41, and 56, as applicable. In addition, the actuary should disclose the following, whether or not required by applicable law:
- a. the intended purpose of the statement of actuarial opinion and a statement on the adequacy of reserves and other **liabilities** based on an **asset adequacy analysis** (see section 3.3);
 - b. whether additional reserves have been established due to the **asset adequacy analysis** (see section 3.1);
 - c. the **assets** chosen, the methodology used for their selection, and their appropriateness for the analysis method (see section 3.1);
 - d. the **asset adequacy analysis** methods chosen, and the information and analysis used to support the determination that the method is appropriate for the reserves and other **liabilities** being tested (see section 3.1.1);

- e. the material risks analyzed, any sensitivity tests performed on those risks, and the results of those tests, when relevant (see sections 3.1 and 3.1.2.4);
- f. the assumptions chosen and any trends reflected in the assumptions (see sections 3.1 and 3.1.2);
- g. the margins chosen, even if the actuary concludes that a margin is not necessary (see section 3.1.2.2);
- h. any discount rates used (section 3.1.2.3);
- i. whether and how reinsurance ceded **cash flows** were reflected in the **asset adequacy analysis** (see section 3.1.3);
- j. whether any aggregation was done, either during testing or during analysis of results (see sections 3.1.4 and 3.2.4);
- k. the use of **cash flows** from other financial calculations in the **asset adequacy analysis** (see section 3.1.5);
- l. the use of **assets**, reserves and other **liabilities**, and **cash flows** from the separate account in the **asset adequacy analysis** (see section 3.1.6);
- m. any management actions reflected in the **asset adequacy analysis** (see section 3.1.7);
- n. the use of any prior period data, studies, financial analyses, and methods; whether such use is still appropriate; and whether any material events have occurred prior to the valuation date that would invalidate the **asset adequacy analysis** on which the statement of actuarial opinion is based (see section 3.1.8);
- o. the testing horizon used in the **asset adequacy analysis** (see section 3.1.9);
- p. any material changes in the methods, models, or assumptions from those used in the prior statement of actuarial opinion or if the models, assumptions, or methods used in the prior statement of actuarial opinion are unknown (see section 3.1.10);
- q. the basis of any judgment that the total amount of any reserves and other **liabilities** reported as “not analyzed” is immaterial (see section 3.1.11);
- r. the extent of any reliance on the data, projections, or supporting analysis of others (see section 3.1.12);
- s. any **subsequent events** of which the actuary is aware (see section 3.1.13);

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- t. the criteria used to form an opinion about the adequacy of reserves or other **liabilities** (see section 3.2.2); and
 - u. any deficiencies or limitations in the data, analyses, assumptions, or related information used in the **asset adequacy analysis** (see section 3.2.7).
- 4.2 Additional Disclosures in an Actuarial Report—The actuary should also include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law;
 - b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

In 1975, the National Association of Insurance Commissioners (NAIC) began requiring that a statement of actuarial opinion on reserves and related actuarial items be included in the annual statement filed by life and health insurance companies. In response to this requirement, the American Academy of Actuaries promulgated Financial Reporting Recommendation No. 7, *Statement of Actuarial Opinion for Life Insurance Company Statutory Annual Statements*, setting forth the actuary's professional responsibilities in providing such an opinion.

The form and content of this actuarial opinion, as specified in the instructions to the annual statement, dealt specifically with reserves and did not explicitly address the adequacy of the assets supporting these reserves and other liabilities to meet the obligations of the company. Although not explicitly required to do so by the opinion or by existing professional standards, some actuaries began to analyze the adequacy of assets in forming their opinions. In addition, when the state of New York adopted the 1980 amendments to the *Standard Valuation Law*, it established an optional valuation basis for annuities, permitting lower reserves provided that an asset adequacy analysis supported the actuarial opinion with respect to such reserves.

The type of asset adequacy analysis most widely used by actuaries is multi-scenario cash flow testing. To guide actuaries choosing to use this technique, the Actuarial Standards Board (ASB) adopted ASOP No. 7, then titled *Performing Cash Flow Testing for Insurers*, in October 1988. In addition, in July 1990, the ASB adopted ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, to provide guidance in determining whether to do cash flow testing in forming a professional opinion or recommendation.

In December 1990, the NAIC amended the *Standard Valuation Law*, and, in June 1991, the NAIC adopted the *Actuarial Opinion and Memorandum Regulation (AOMR)*. These actions had the effect of moving the requirement for the statement of actuarial opinion from the annual statement instructions into the model law itself and provided detailed instructions for the form and content of the opinion and the newly required supporting memorandum. The most significant changes made by the NAIC in the 1991 *AOMR* were that companies were required to name an appointed actuary, and, for companies subject to section 8 of the *AOMR*, statements of actuarial opinion on reserve and other liability adequacy were required to be based on an asset adequacy analysis described in the supporting memorandum. The asset adequacy analysis required by the regulation must conform to the standards of practice promulgated by the ASB.

For companies subject to section 7, the 1991 *AOMR* required an actuarial opinion that the reserves and related actuarial items have been calculated in accordance with the *Standard*

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Valuation Law and supporting regulations. Section 7 of the 1991 AOMR did not require an opinion on reserve adequacy.

The ASB adopted Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life and Health Insurers*, in 1993 to provide guidance for section 7 opinions.

In 1993, the ASB also adopted ASOP No. 22, *Statutory Statements of Opinion Based on Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, which replaced Financial Reporting Recommendation Nos. 7 and 11 as guidance for section 8 opinions.

In the late 1990s and early 2000s, the ASB reviewed all standards of practice related to cash flow testing. Portions of ASOP No. 14 were incorporated into ASOP Nos. 7 and 22. In 2001, the ASB adopted the revised ASOP Nos. 7 and 22 and repealed ASOP No. 14.

Starting in 2001, the model *AOMR* adopted by the NAIC required all actuarial opinions to be based on asset adequacy analysis.

In addition to the *AOMR*, actuarial opinions are required under the NAIC's *Synthetic Guaranteed Investment Contracts Model Regulation* and under the NAIC's *Separate Accounts Funding Guaranteed Minimum Benefits under Group Contracts Model Regulation*.

In 2012, the NAIC initially adopted the *Valuation Manual*, which sets forth the minimum reserve and related requirements for jurisdictions where the *Standard Valuation Law*, as amended by the NAIC in 2009, has been enacted. The *Valuation Manual* took effect on January 1, 2017, pursuant to section 11 of the *Standard Valuation Law*. Requirements for the annual actuarial opinion and memorandum pursuant to section 3 of the *Standard Valuation Law* are provided in "VM-30: Actuarial Opinion and Memorandum Requirements." In December 2017, the NAIC adopted Actuarial Guideline LI, *The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves*, which provides uniform guidance and clarification of requirements for asset adequacy testing for long-term care insurance.

In response to these NAIC activities, the ASB decided to revise this ASOP.

Current Practices

Statements of actuarial opinion on reserves and related items have been provided since 1975, and practice regarding the basic elements of the opinion is well established. With respect to opinions based on asset adequacy analysis, current practice continues to evolve.

Actuaries who perform asset adequacy analysis use professional judgment in choosing the appropriate methods, testing periods, modeling techniques, levels of aggregation, etc. The actuary forms an opinion based on the results of the asset adequacy analysis results and any additional analyses needed to render that opinion. The actuarial memorandum discloses the details of the asset adequacy analysis and the basis for the actuary's opinion. Additional

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documentation may be prepared by the actuary as appropriate to support the actuarial memorandum.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Statements of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities*, was approved in March 2020 with a comment deadline of November 30, 2020. Eight comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 22 Task Force and Life Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed.

Summarized below are the significant issues and questions contained in the comment letters and responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 22 Task Force, the ASB Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested replacing the phrase “reserves and other liabilities” with “liabilities.”
Response	The reviewers disagree and made no change.
SECTION 2. DEFINITIONS	
Section 2.1, Asset	
Comment	One commentator believed the definition of assets was vague and proposed rewording the definition of assets to align with the definition under statutory accounting principles.
Response	The reviewers disagree and made no change.
Section 2.3, Cash Flow	
Comment	One commentator said “or other assets” was unclear and suggested clarifying the phrase.
Response	The reviewers agree and clarified the language.
Section 2.4, Cash Flow Risk	
Comment	One reviewer suggested replacing the phrase “expectations or assumptions” with either “expectations” or “assumptions” because they have the same meaning.
Response	The reviewers disagree and made no change.
Section 2.5, Cash Flow Testing	
Comment	One commentator suggested that the use of the term “cash flow risk” should be singular throughout the ASOP.
Response	The reviewers disagree and made no change.

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Section 2.10, Scenario	
Comment	One commentator suggested replacing “economic and other assumptions” with “assumptions.”
Response	The reviewers disagree and made no change.
Section 2.11, Subsequent Events	
Comment	One commentator suggested removing the word “material” from the definition of subsequent events.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Two commentators suggested using the date the statement of actuarial opinion is signed rather than the date the statement of actuarial opinion is filed.
Response	The reviewers agree and made the change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Asset Adequacy Analysis	
Comment	One commentator suggested adding a list of specific asset risks to be considered.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested clarifying that asset adequacy reserves established in prior years should be excluded when performing asset adequacy analysis.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested modifying the language to remove the implication that asset adequacy analysis is a guarantee.
Response	The reviewers agree and modified the language.
Section 3.1.1, Analysis Methods	
Comment	One commentator proposed additional disclosure when liability cash flows have a material dependency on the asset cash flows and cash flow testing is not used.
Response	The reviewers believe the guidance covers these issues at the appropriate level of detail and made no change in response to this comment.
Comment	Several commentators suggested wording to clarify when cash flow testing would be appropriate.
Response	The reviewers agree and clarified the language.
Comment	One commentator suggested specifying that the methods given in the examples should only be considered when cash flow testing is not warranted, and not as alternatives in general.
Response	The reviewers believe the guidance is appropriate and note that section 3.1.1 states “The actuary should use professional judgment in choosing an appropriate analysis method.” The reviewers made no change in response to this comment.
Section 3.1.1(a), Gross Premium Reserve Test	
Comment	One commentator suggested additional language to clarify when GPV would not be appropriate.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.

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Section 3.1.1(c), Demonstration of Immaterial Variation	
Comment	Two commentators suggested additional language for the example.
Response	The reviewers agree and updated the language.
Section 3.1.1(e), Loss Ratio Methods	
Comment	One commentator suggested adding a definition for “Loss Ratio Method.”
Response	The reviewers disagree and made no change in response to this comment.
Section 3.1.2.1, Trends	
Comment	One commentator suggested adding a reference to ASOP No. 25, <i>Credibility Procedures</i> , and adding more detail regarding the impact of the source and credibility of data when setting assumption trends.
Response	The reviewers added references to ASOP No. 23, <i>Data Quality</i> , and ASOP No. 25.
Section 3.1.2.1(c)	
Comment	One commentator noted that the consideration of trends should not be dependent on the results of the analysis.
Response	The reviewers agree and modified the language.
Section 3.1.2.2, Margins	
Comment	One commentator suggested that the actuary should document the rationale for excluding margin in an assumption.
Response	The reviewers note that this is covered in sections 3.4 and 4.1(g) and made no change.
Comment	One commentator suggested adding a provision for the actuary to consider the overall impact of margins included in the analysis when determining the level of assumption margin.
Response	The reviewers agree and modified the language accordingly.
Section 3.1.2.2(g)	
Comment	One commentator suggested replacing “the impact of any prescribed margin on the overall analysis” with “whether the margin is prescribed.”
Response	The reviewers removed the reference to prescribed margins in response to another comment.
Section 3.1.2.3, Discount Rates	
Comment	Two commentators suggested that the discount rate should also reflect reinvestment rates.
Response	The reviewers agree and modified the language accordingly.
Comment	One commentator suggested modifying the language so it applies to all analysis methods.
Response	The reviewers agree and modified the language accordingly.
Comment	One commentator suggested adding detailed guidance for choosing a discount rate when cash-flow testing is used.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.1.3, Reinsurance Ceded	

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Comment	One commentator suggested adding more detail for direct written business.
Response	The reviewers disagree and made no change.
Section 3.1.4, Aggregation During Testing	
Comment	One commentator suggested adding language related to AG 51 limitations on aggregation.
Response	The reviewers believe this is already addressed in section 3.2.4 and ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , and made no change.
Section 3.1.5, Use of Cash Flows from Other Financial Calculations	
Comment	One commentator questioned whether cash flows from one scenario-based calculation would be used in another scenario-based calculation.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator suggested deleting “under moderately adverse conditions” because the phrase is not necessary.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.1.6, Separate Account Assets	
Comment	One commentator suggested providing a definition of “insulated.”
Response	The reviewers clarified the language.
Section 3.1.7, Management Action	
Comment	One commentator suggested replacing the word “changes” with “actions” in the last sentence.
Response	The reviewers agree and made the change.
Comment	Two commentators suggested adding a consideration reflecting obstacles to the implementation of management actions, such as regulatory approval.
Response	The reviewers agree and added new section 3.1.7(e).
Comment	One commentator suggested changing the wording from “consider quantifying” to “quantify” the impacts of these changes as part of the analysis.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Two commentators observed that there was an inconsistency between 3.1.7 and 4.1(l).
Response	The reviewers agree and made a change to 4.1(l) (now section 4.1[m]).
Section 3.1.8, Use of Data or Analyses Predating the Valuation Date	
Comment	One commentator suggested replacing “opinion” with “statement of actuarial opinion” in sections 3.1.8, 3.1.10, 4.1(m), and 4.1(o) (now sections 4.1[n] and 4.1[o], respectively).
Response	The reviewers agree and made the changes.
Section 3.1.10, Changes in Methods, Models, or Assumptions	
Comment	Two commentators suggested removing “Similarly, when the analysis is based on the periodic updating of experience data, factors, or weights, such periodic updating is not a change within the meaning of this section.”
Response	The reviewers agree and removed the language.

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Section 3.1.11, Completeness	
Comment	One commentator suggested replacing “not analyzed” with “that has not been subject to asset adequacy analysis.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested adding more detail and examples to describe anticipated material cash flows.
Response	The reviewers believe the guidance covers these issues at the appropriate level of detail and therefore made no change in response to this comment.
Comment	One commentator suggested clarification regarding how the ASOP reconciles with language in the Actuarial Opinion and Memorandum Regulation (Section 5.E.1), which requires that “the statement of actuarial opinion shall apply to all in force business on the statement date....”
Response	The reviewers believe that the interpretation of regulations is beyond the scope of the standard and therefore made no change in response to this comment.
Section 3.1.13, Subsequent Events	
Comment	One commentator suggested that additional guidance was needed related to the disclosure of subsequent events.
Response	The reviewers believe that this issue is addressed in section 4.1(r) (now section 4.1[s]) of this ASOP, as well as in ASOP No. 41, <i>Actuarial Communications</i> , and therefore made no change.
Section 3.2.6, Opinions of Other Actuaries	
Comment	One commentator suggested adding the word “only” to claiming reliance on the opinions of other actuaries.
Response	The reviewers disagree and made no change.
Section 3.4, Documentation	
Comment	One commentator suggested deleting “or could assume the assignment if necessary.”
Response	The reviewers agree and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator noted that the disclosures in section 4.1 do not need to be repeated in each document.
Response	The reviewers agree and clarified the language.



**Actuarial Standard
of Practice
No. 23**

Revised Edition

Data Quality

**Developed by the
Data Quality Task Force of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2016**

Doc. No. 185

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December 2016

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Data Quality

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 23

This document contains the final version of a revision of ASOP No. 23, *Data Quality*.

Background

The ASB originally adopted ASOP No. 23, *Data Quality*, in 1993. That ASOP was prepared by the Data Quality Task Force of the Specialty Committee of the ASB. The ASB revised ASOP No. 23 in 2004 to be consistent with the then-current ASOP format, to reflect then-current, generally accepted practice with respect to data quality, and to provide guidance concerning other information relevant to the use of data. ASOP No. 23 was further updated for deviation language, effective May 1, 2011.

In 2014, the ASB concluded that this ASOP should be revised to update language to keep pace with practice changes (for example, increasing use of non-traditional data sources for predictive models, and legislatively mandated data submissions). This revision is the result of that review.

Exposure Draft

The exposure draft was released in November 2015 with a comment deadline of February 29, 2016. Twenty-two comment letters were received. The task force considered all comments received and made appropriate changes where needed. For a summary of the substantive issues contained in the comment letters on the exposure draft and the responses, please see appendix 2.

Key Changes

No significant changes have been made, but the wording has been clarified in a number of sections, including the following:

1. Section 1.2 (Scope) has been modified to clarify that if an actuary prepares data, or is responsible for the preparation of data, that the actuary believes will be used by other actuaries in providing actuarial services, the actuary should apply the relevant portions of this standard as though the actuary were planning to use the data, taking into account the preparing actuary's understanding of the assignment for which the data will be used.
2. The defined term "comprehensive" has been replaced with the defined term "sufficient" (with the same definition), because that term fits more naturally with the definition.

3. The definition of “data” has been changed to clarify that it includes information derived mathematically from data.
4. Section 3.2(b)(3) has been revised to clarify that, in selecting data, the actuary should consider whether the data are reasonable given external data and information only to the extent the external data and information are relevant, readily available, and known to the actuary.
5. Section 3.3 has been modified to clarify that if an actuary performs a review of data, the actuary should consider comparing the current data to data used in the prior analysis, if similar work has been previously performed for the same or recent periods, but only if such consistency can reasonably be expected.
6. Section 3.4(c) has been modified to indicate that, rather than adjusting data to compensate for data deficiencies, an actuary may adjust the results of the analysis (for example, by increasing the range of reasonable estimates).
7. Section 3.4(e) has been modified to clarify that an actuary may, with the consent of the principal, complete any parts of an assignment for which the actuary determines the data are suitable, even though the data may be inadequate to complete the full assignment.
8. Section 3.7 has been added to remind actuaries that confidential information should be handled consistent with Precept 9 of the *Code of Professional Conduct*.

The General Committee would like to thank former committee members Jeremy J. Brown, Charles F. Cook, John C. Lloyd, Cande J. Olsen, and Lance J. Weiss for their contribution to the development of this ASOP.

The ASB voted in December 2016 to adopt this standard.

Data Quality Task Force

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 23

DATA QUALITY

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to the actuary when performing actuarial services involving **data**.
- 1.2 **Scope**—This ASOP provides guidance to actuaries when selecting **data**, performing a **review** of **data**, using **data**, or relying on **data** supplied by others, in performing actuarial services. The ASOP also applies to actuaries who are selecting or preparing **data**, or are responsible for the selection or preparation of **data**, that the actuary believes will be used by other actuaries in performing actuarial services, or when making appropriate disclosures with regard to **data** quality. Other actuarial standards of practice may contain additional considerations related to **data** quality that are applicable to particular areas of practice or types of actuarial assignment.

If an actuary prepares **data**, or is responsible for the preparation of **data**, to be used by other actuaries in performing actuarial services, the actuary should apply the relevant portions of this standard as though the actuary were planning to use the **data**, taking into account the preparing actuary's understanding of the assignment for which the **data** will be used.

This standard does not apply to the generation of a wholly hypothetical **data** set.

This standard does not require the actuary to perform an **audit** of the **data**.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document

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differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for any actuarial work product for which **data** were provided to or developed by the actuary on or after April 30, 2017.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Appropriate Data**—**Data** suitable for the intended purpose of an analysis and relevant to the system or process being analyzed.
- 2.2 **Audit**—A formal and systematic examination of **data** for the purpose of testing its accuracy and completeness.
- 2.3 **Data**—Numerical, census, or classification information, or information derived mathematically from such items, but not general or qualitative information. Assumptions are not **data**, but **data** are commonly used in the development of actuarial assumptions.
- 2.4 **Data Element**—An item of information, such as date of birth or risk classification.
- 2.5 **Review**—An examination of the obvious characteristics of **data** to determine if such **data** appear reasonable and consistent for purposes of the assignment. A **review** is not as detailed as an **audit of data**.
- 2.6 **Sufficient**—Containing enough **data elements** or records for the analysis.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—**Appropriate data** that are accurate and complete may not be available. The actuary should use available **data** that, in the actuary's professional judgment, allow the actuary to perform the desired analysis. However, if significant **data** limitations are known to the actuary, the actuary should disclose those limitations and their implications in accordance with section 4.1(b). The following sections discuss such considerations in more detail.
- 3.2 **Selection of Data**—In undertaking an analysis, the actuary should determine what **data** to use. The actuary should take into account the scope of the assignment and the intended use of the analysis being performed to determine the nature of the **data** needed and the number of alternative **data**

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sets or **data** sources, if any, to be considered. The actuary should do the following:

- a. consider the **data elements** that are desired and possible alternative **data elements**; and
- b. select the **data** for the analysis with consideration of the following:
 1. whether the **data** constitute **appropriate data**, including whether the **data** are sufficiently current;
 2. whether the **data** are reasonable with particular attention to internal consistency;
 3. whether the **data** are reasonable given relevant external information that is readily available and known to the actuary;
 4. the degree to which the **data** are **sufficient**;
 5. any known significant limitations of the **data**;
 6. the availability of additional or alternative **data** and the benefit to be gained from such additional or alternative **data**, balanced against how practical it is to collect and compile such additional or alternative **data**; and
 7. sampling methods, if used to collect the **data**.

3.3 **Review of Data**—A **review of data** may not always reveal defects. Nevertheless, the actuary should perform a **review**, unless, in the actuary's professional judgment, such **review** is not necessary or not practical. In exercising such professional judgment, the actuary should take into account the purpose and nature of the assignment, any relevant constraints, and the extent of any known checking, verification, or **audit** of the **data** that has already been performed.

If, in the actuary's professional judgment, it is not appropriate to perform a **review** of the **data**, the actuary should disclose that the actuary has not performed such a **review**, the reason the actuary has not performed such a **review**, and any resulting limitations on the use of the actuarial work product, in accordance with section 4.1(c).

If the actuary performs a **review**, the actuary should do the following:

- a. make a reasonable effort to determine the definition of each **data element** used in the

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analysis; and

- b. make a reasonable effort to identify **data** values that are questionable or relationships that are significantly inconsistent. If the actuary believes questionable or inconsistent **data** values could have a significant effect on the analysis, the actuary should consider taking further steps, when practical, to improve the quality of the **data**. The actuary should disclose in summary form any unresolved questionable **data** values that the actuary believes could have a significant effect on the analysis, in accordance with section 4.1(d). The actuary also should disclose any significant steps the actuary has taken to improve the **data**, in accordance with section 4.1(e).

If the actuary performs a **review**, the actuary should also consider comparing current **data** with the **data** used in the prior analysis for consistency, if similar work has been previously performed for the same or recent periods and if such consistency can reasonably be expected. If the actuary does not have the prior **data**, the actuary should consider requesting the prior **data**.

- 3.4 **Use of Data**—Because **appropriate data** that are accurate and complete may not be available, the actuary should make a professional judgment about which of the following are applicable:
- a. the **data** are of acceptable quality to perform the analysis;
 - b. the **data** require enhancement before the analysis can be performed, and it is practical to obtain additional or corrected **data** that will allow the analysis to be performed;
 - c. judgmental adjustments or assumptions can be applied to the **data** that allow the actuary to perform the analysis. Any judgmental adjustments to **data** or assumptions should be disclosed in accordance with section 4.1(f). If the actuary judges that the use of the **data**, even with adjustments and assumptions applied, may cause the results to be highly uncertain or contain a significant bias, the actuary may choose to complete the assignment but should disclose the potential existence of the uncertainty or bias, and, if reasonably determinable, the nature and potential magnitude of such uncertainty or bias, in accordance with section 4.1(g). Alternatively, the actuary may compensate for the **data** deficiencies by adjusting the results, such as by increasing the range of reasonable estimates, and disclose the adjustments, in accordance with section 4.1(f);
 - d. if the actuary believes that the **data** are likely to contain significant defects, the actuary should determine, if practical, the nature and extent of any checking, verification, or **audit** of the **data** that has been performed. Then, if, in the actuary's professional

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judgment, a more extensive **review** is needed, the actuary should arrange for such a **review** prior to completing the assignment; or

- e. if, in the actuary's professional judgment, the **data** are so inadequate that the **data** cannot be used to satisfy the purpose of the assignment, then the actuary should 1) obtain different **data**, 2) complete, with the consent of the principal, any parts of the assignment for which the actuary determines the **data** are suitable, or 3) decline to complete the assignment. However, if the actuary is required by a regulator or other governmental authority to use **data** that the actuary considers unsuitable for use in the actuary's analysis, the actuary may use the **data** subject to the disclosure requirements of section 4.

3.5 **Reliance on Data Supplied by Others**—In most situations, the **data** are provided to the actuary by others. The accuracy and completeness of **data** supplied by others are the responsibility of those who supply the **data**. The actuary may rely on **data** supplied by others, subject to the guidance in sections 3.3 and 3.4. The actuary should disclose reliance on **data** supplied by others in an appropriate actuarial communication, in accordance with section 4.1(h).

3.6 **Reliance on Other Information Relevant to the Use of Data**—In many situations, the actuary is provided with other information relevant to the appropriate use of **data**, such as contract provisions, plan documents, and reinsurance treaties. The validity and completeness of such information are the responsibility of those who supply such information. The actuary may rely on such information supplied by others, unless it is or becomes apparent to the actuary in the course of the assignment that the information is unsuitable for use in the actuary's analysis. The actuary should disclose reliance on such information supplied by others in an appropriate actuarial communication, in accordance with section 4.1(h).

If the actuary believes the information is unsuitable, or inconsistencies between the information and the **data** suggest that the information may be unsuitable, the actuary should make a professional judgment about whether to use the information. The actuary should consider disclosing when such relevant information that has been provided is not used.

If the information suggests that the **data** may be unsuitable, the actuary should make a professional judgment about whether to use the **data** based on the considerations described in sections 3.4 and 3.5.

3.7 **Confidentiality**—The actuary should be aware that **data** may contain confidential information. Such confidential information should be handled consistent with Precept 9 of the *Code of Professional Conduct*.

3.8 **Limitation of the Actuary's Responsibility**—The actuary is not required to do any of the

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following:

- a. determine whether **data** or other information supplied by others are falsified or intentionally misleading;
- b. compile additional **data** solely for the purpose of searching for questionable or inconsistent **data**; or
- c. perform an **audit** of the **data**.

Section 4. Communications and Disclosures

4.1 **Communication and Disclosure**—Any actuarial communication prepared to communicate the results of work subject to this standard should comply with the requirements of ASOP No. 41, *Actuarial Communications*. An actuarial communication can comply with some or all of the specific requirements of this section by making reference to information contained in other actuarial communications available to the intended users (as defined in ASOP No. 41), such as an annual actuarial valuation report. Such communication should contain the following disclosures when relevant and material:

- a. the source(s) of the **data**;
- b. any limitations on the use of the actuarial work product due to uncertainty about the quality of the **data** or other information relevant to the use of the **data**, as discussed in section 3.1;
- c. whether the actuary performed a **review** of the **data** and, if not, the reason for not reviewing the **data** and any resulting limitations on the use of the actuarial work product, as discussed in section 3.3;
- d. in summary form, unresolved concerns the actuary may have about questionable **data** values that are relevant to the use of the **data** and could have a significant effect on the actuarial work product, as discussed in section 3.3(b);
- e. in summary form, discussions of any significant steps the actuary has taken to improve the **data** due to identifying questionable **data** values or relationships, as discussed in section 3.3(b);
- f. in summary form, significant judgmental adjustments or assumptions that the actuary

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applied to the **data** or to the results, or are known by the actuary to have been applied to the **data**, to allow the actuary to perform the analysis, as discussed in section 3.4(c);

- g. the existence of results that are highly uncertain or have a potentially significant bias of which the actuary is aware due to the quality of the **data** or other information relevant to the use of the **data**, and the nature and potential magnitude of such uncertainty or bias, if they can be reasonably determined, as discussed in section 3.4(c);
- h. the extent of the actuary's reliance on **data** and other information relevant to the use of the **data** supplied by others, as discussed in sections 3.5 and 3.6;
- i. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- j. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- k. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

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Appendix 1

Background and Current Practices

Note: The following appendix is provided for informational purposes, but is not part of the standard of practice.

Background

An actuarial analysis is based upon an analysis of data, along with practical knowledge of the area of practice and training in actuarial theory, which together enable the actuary to perform and interpret the results of calculations. Throughout the analytic process, data play an important role. The accuracy and validity of the actuarial analysis are dependent on, among other things, the quality of the data used. Hence, an actuarial standard of practice concerning data quality is appropriate.

Data frequently contain errors, are not complete, and are not precisely appropriate for the intended analysis. Actuaries deal with these limitations, the majority of which are non-critical. However, actuaries are often called upon to perform actuarial services in situations where data limitations may be critical. Actuaries use professional judgment when determining whether and how to refine data or make modifications within the analysis.

Current Practices

Actuaries use informed judgment to determine what kinds of data are appropriate for a particular analysis. It is important that the data used are relevant to the system or process being analyzed.

Data have played an increasingly important role in actuarial practice in recent years. In addition to the traditional uses of data that have been in place for many years, actuaries and their principals have been using broader sources of data more recently to support improved business decisions. This has included more sophisticated data analytics to improve functions such as claims processes, underwriting, pricing, loss control, distribution management, and customer service. In addition, there has been expansion of use of sophisticated models for a wide range of purposes, and those models are heavily reliant on the data inputs. Because of their analytical skills, actuaries have been deeply involved in these advancements, including assessing the quality and sufficiency of data for use in various applications.

Persons or organizations responsible for generating, collecting, or publishing data may apply

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different standards of quality assurance, ranging from straightforward compilation of figures to extensive verification. Actuaries, in turn, deal with the question of the quality of data underlying their work products in a variety of ways and with varying levels of review or checking.

Actuaries are called upon to provide analyses for a broad range of audiences, from limited distribution within an organization to public exposure.

Important aspects of data use include documentation and disclosure of 1) the sources of data, 2) review of data, 3) significant biases resulting from data, 4) adjustments or corrections made to the data, and 5) the extent of reliance on data supplied by others. Typically, actuaries do not audit data.

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Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 23, *Data Quality*, was issued in November 2015 with a comment deadline of February 29, 2016. Twenty-two comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force carefully considered all comments received, and the General Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” includes the Task Force, General Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

TRANSMITTAL MEMORANDUM	
Question 1: Does this proposed revision provide appropriate guidance for an actuary preparing data for another actuary’s use (for example, legislatively-mandated data submissions)?	
Comment	Most commentators who addressed the question felt the proposed revision provided appropriate guidance.
Comment	One commentator believed the ASOP should address the duty of care owed and the alignment of data with the data request.
Response	The reviewers believe these topics are adequately covered in the <i>Code of Professional Conduct</i> , and in sections 1.2 and 3.2 of this ASOP, and made no change.
Comment	Several commentators believed the ASOP should clarify whether it applies to an actuary preparing data for use by another actuary working in the same firm.
Response	The reviewers note that section 1.2 indicates that the standard applies when an actuary “prepares data or is responsible for the preparation of data to be used by other actuaries in performing actuarial services,” and provides no exception for actuaries working within the same firm, and made no change.
Question 2: Does this proposed revision provide appropriate guidance for working with nontraditional data sources (for example, predictive models)?	
Comment	Most commentators who addressed the question felt the proposed revision provided appropriate guidance.
Comment	One commentator suggested clarifying the extent to which derived data are included under this ASOP.
Response	The reviewers agree that some derived data is subject to this ASOP and clarified the definition of “data.”

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Question 3: Considering the guidance in section 3.6, which discusses the quality of other information relevant to data, is the title of the standard “Data Quality” appropriate?	
Comment	Most commentators who addressed the question felt that the standard was appropriately titled.
GENERAL COMMENTS	
Comment	Several commentators questioned the intent behind the replacement of the word “material” in the existing ASOP with the word “significant” in the revision.
Response	Where a change was made from “material” to “significant”, the reviewers believe that the use of the word “significant” is appropriate and consistent with its definition in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> .
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested that this section be clarified to indicate that it applies to the performance of any of the activities described.
Response	The reviewers agree and modified the language.
Comment	Several commentators suggested that section 1.1(e) be clarified to apply only to situations in which an actuary is performing an actuarial service by preparing data for use by other actuaries in an actuarial work product.
Response	The reviewers disagree with the suggested change. Sections 1.1 and 1.2 have been reorganized and reworded to be clearer, and section 1.2 now provides that “If an actuary prepares data, or is responsible for the preparation of data, to be used by other actuaries in performing actuarial services, the actuary should apply the relevant portions of this standard as though the actuary were planning to use the data, taking into account the preparing actuary’s understanding of the assignment for which the data will be used.”
Comment	One commentator believed items (a)-(e) are not clear and would benefit from additional definitions or examples.
Response	Sections 1.1 and 1.2 have been reorganized and reworded to be clearer. The reviewers do not believe examples are needed.
Section 1.2, Scope	
Comment	One commentator suggested that the ASOP should apply to actuaries who assume responsibility for preparing data as well as to those who prepare the data.
Response	The reviewers agree and modified the language.
Comment	One commentator suggested that the term “wholly hypothetical data set” needed to be defined or better described.
Response	The reviewers believe the term is clear and made no change.
Comment	One commentator suggested deleting the sentence “This standard does not require the actuary to perform an audit of the data” because it is duplicative with section 3.8.
Response	The reviewers believe this sentence is helpful in understanding the scope and made no change.

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SECTION 2. DEFINITIONS	
Comment	One commentator suggested adding definitions for “reliable data” and “authoritative data,” and retaining the definition of “practical” from the existing ASOP.
Response	The reviewers disagree with adding the definitions and note that the term “practical” is defined in ASOP No. 1. Therefore, the reviewers made no change.
Comment	One commentator requested that a definition for “information” be added.
Response	The reviewers believe the term is used with its general meaning and does not require a definition. Therefore, the reviewers made no change.
Section 2.2, Audit	
Comment	Two commentators suggested that the definition specify that an audit of data should only be performed by a professional auditor.
Response	The reviewers note that the term “audit” has a specific definition in the ASOP that does not correspond with the term under U.S. GAAP and other accounting standards, and therefore made no change.
Section 2.3, Comprehensive (now section 2.6, Sufficient)	
Comment	Two commentators stated that the terms “comprehensive” and “complete” were not sufficiently distinguished from one another.
Response	The reviewers agree and changed “comprehensive” to “sufficient.”
Section 2.4, Data (now section 2.3)	
Comment	Two commentators felt that “qualitative information” should be included rather than excluded from the definition of “data.”
Response	The reviewers disagree and made no change.
Section 2.6, Review (now section 2.5)	
Comment	Two commentators suggested that the definition of “review” be expanded to include both formal and informal examinations of data, and that it be clarified that a review is not as detailed as an audit.
Response	The reviewers agree and removed the word “informal” from the definition, and added language to indicate that a review is not as detailed as an audit.
Comment	One commentator suggested that the meaning of the phrase “obvious characteristics” was not clear.
Response	The reviewers disagree and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator suggested adding a provision mandating compliance with applicable data confidentiality laws and regulations.
Response	The reviewers agree and added new section 3.7, Confidentiality, to address this comment.
Section 3.1, Overview	
Comment	Two commentators suggested that the standard address availability of data (e.g., proprietary data) in terms of practicality and the reasonableness of the effort required to obtain it.
Response	The reviewers clarified the language in section 3.2(b)(6).

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Section 3.2, Selection of Data	
Comment	One commentator requested that the phrase “sampling methods” be defined.
Response	The reviewers believe the meaning of the term is clear and made no change.
Comment	One commentator suggested that the word “desired” be replaced with “necessary for the scope of the assignment” because the commentator felt that “desired” seemed too vague and implied subjective preference rather than professional judgement. Another commentator suggested replacing “desired” with “needed” to distinguish between “the most desirable elements” and others that might be suitable.
Response	The reviewers believe that identifying data elements as “necessary” or “needed” for the assignment would be inconsistent with the guidance in section 3.2(a) that the actuary should consider “possible alternative data elements”, and made no change.
Comment	One commentator suggested replacing the first occurrence of “should consider” with “should determine” and the second occurrence with “should take into account.”
Response	The reviewers agree with the suggested wording changes and made the changes.
Comment	One commentator suggested that the meaning of “external consistency” in section 3.2(b) be clarified.
Response	The reviewers agree, removed the reference to “external consistency” from section 3.2(b), and added section 3.2(b)(3) to clarify.
Section 3.3, Review of Data	
Comment	One commentator suggested replacing the word “reason” with “justification” because the commentator believed that the word “justification” indicated a higher level of professionalism was involved in providing a justification.
Response	The reviewers believe that the word “reason” appropriately describes the intended disclosure and therefore made no change.
Comment	One commentator suggested that the standard allow “reasonableness” of the data to be established by reference to the results of using the data, rather than through a review of the data.
Response	The reviewers believe that the data should be evaluated for reasonableness, rather than only requiring that the results be reasonable, and made no change.
Comment	One commentator felt the actuary should be required to request prior data for similar work performed in earlier periods and perform a comparison. Another commentator felt an actuary should be required to perform a comparison with prior data if it is readily available, while other commentators felt the standard should not require a comparison with prior data where it is not relevant.
Response	The reviewers believe that consistency with prior data need only be considered when such consistency can reasonably be expected and changed the wording of section 3.3. The reviewers also note that section 3.3 indicates that the actuary should consider “comparing current data with the data used in the prior analysis for consistency,” and “should consider requesting the prior data,” but do not believe that the standard should be more prescriptive.
Comment	Two commentators felt that data provided by highly credible sources should not require a review.
Response	The reviewers believe this is appropriately covered by the current language in section 3.3, and made no change.

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Comment	One commentator asked whether impracticality was legitimate grounds for not performing a review.
Response	The reviewers believe that this is appropriately covered in section 3.3, including required disclosure in such situations, and made no change.
Comment	One commentator indicated that the last paragraph in this section is redundant and could be deleted.
Response	The reviewers disagree and made no change.
Comment	One commentator suggested that the standard refer to “external control totals.”
Response	The reviewers believe that level of specificity is unnecessary and made no change.
Comment	One commentator suggested that several instances of “should consider” are inconsistent with ASOP No. 1.
Response	The reviewers agree and modified the language.
Comment	One commentator suggested that this section also refer to the selection of data (not just to the preparation of data).
Response	The reviewers modified the language by deleting the reference to “preparation of data.”
Comment	One commentator felt that the review of the data should be performed by someone other than the actuary who selected or prepared the data.
Response	The reviewers do not believe that the guidance should prohibit the actuary who prepares the data from also reviewing the data, and made no change.
Comment	One commentator suggested that the actuary performing the data review must assess whether data are adequate for the purpose of the assignment.
Response	The reviewers believe the modified language in section 3.2 addresses this issue.
Comment	One commentator suggested clarifying section 3.3(b) by inserting “taking” before “further steps” (to read “the actuary should consider taking further steps, when practical, to improve the quality of the data”) and “the actuary has” between “steps” and “taken” (to read “The actuary also should disclose any significant steps the actuary has taken to improve the data”).
Response	The reviewers agree and modified the language.
Comment	One commentator suggested clarifying the responsibilities of the actuary who does not know what steps have been taken to improve the quality of the data.
Response	The reviewers note that sections 4.1(e) and 4.1(f) only require the actuary to disclose steps taken that the actuary knows about, and made no change.
Comment	One commentator felt that this section states that the actuary should review the data in determining whether a review is needed, which seems circular.
Response	The reviewers disagree that the section was circular, but modified the language to clarify.
Section 3.4, Use of Data	
Comment	One commentator suggested that the standard allow for the adjustment of results, rather than the adjustment of data, to compensate for deficiencies in the data.
Response	The reviewers agree and added a sentence to section 3.4(c).

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Comment	Two commentators suggested that completion of part of an assignment be permitted where the data were suitable for that portion of the assignment.
Response	The reviewers agree and modified the language in section 3.4(e).
Section 3.5, Reliance on Data Supplied by Others	
Comment	One commentator felt the standard should encourage positive assurance, and discourage negative assurance and blind reliance.
Response	The reviewers believe that the reference in this section to the requirements in sections 3.3 and 3.4 addresses this concern, and made no change.
Section 3.6, Reliance on Other Information Relevant to the Use of Data	
Comment	One commentator requested that the term “unsuitable” be defined and that the actuary be required to disclose mandated use of unsuitable data.
Response	The reviewers believe the meaning of the term “unsuitable” is clear. The reviewers agree that the actuary should be required to disclose mandated use of unsuitable data, and removed the language from section 3.5 and added it to section 3.4(e) to address this concern.
Comment	One commentator asked if contract provisions, plan documents, reinsurance treaties, etc. should be included in “data” rather than in the separate category of information.
Response	The reviewers believe the definition of data is appropriate as stated and made no change.
Comment	One commentator suggested that this section is redundant and could be deleted.
Response	The reviewers disagree and made no change.
Section 3.7 (now section 3.8), Limitations of the Actuary’s Responsibility	
Comment	One commentator suggested that the nature and extent of the “additional data compilations” referred to here be clarified.
Response	The reviewers agree and clarified the language in section 3.8(b).
Section 3.8, Documentation	
Comment	Several commentators questioned the need for this section and its consistency with other parts of this standard.
Response	The reviewers agree and deleted this section.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Communication and Disclosure	
Comment	One commentator suggested requiring disclosure of “specific outlier data points or data elements whose exclusion (inclusion) could result in materially different conclusions.”
Response	The reviewers disagree that this level of specificity is needed and made no change.
Comment	One commentator suggested changing section 4.1(b) to require disclosure of “the nature of the data review performed by the actuary” and to require disclosure of all adjustments to data, not just the significant ones.
Response	The reviewers disagree and made no change.
Comment	One commentator suggested changing section 4.1(d) to clarify the meaning of “in summary form.”
Response	The reviewers do not believe that additional specificity is needed and made no change.

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Comment	One commentator suggested changing “significant effect” to “impact” in section 4.1(f).
Response	The reviewers disagree and made no change in what is now section 4.1(d).
Comment	Two commentators suggested that the disclosure items need not be included in every actuarial communication. Another commentator requested clarification regarding what “issuing communications” means, and where disclosures in sections 3.3, 3.4, and 3.5 should be made. One commentator suggested incorporating the distinction between actuarial communications and actuarial report under ASOP No. 41, and clarifying which parts of ASOP No. 41 apply to each.
Response	The reviewers modified the beginning of this section to indicate that “An actuarial communication can comply with some or all of the specific requirements of this section by making reference to information contained in other actuarial communications available to the intended users.”, consistent with ASOP No. 41, <i>Actuarial Communications</i> . The reviewers do not believe additional explanation of the requirements of ASOP No. 41 should be added to this standard.
Comment	Several commentators suggested the sections that are now 4.1(i)-(k) are redundant with ASOP No. 41 and could be deleted.
Response	The reviewers note that the disclosure language in (i)-(k) is standard in all ASOPs and made no change.
Comment	One commentator suggested making this section consistent with section 3.3 by restoring the previously deleted wording “and any resulting limitations on the use of the actuarial work product.”
Response	The reviewers agree and made the change in what is now section 4.1(c).
Comment	One commentator questioned why “material” was changed to “significant” in some sections of 4.1 but not in (i), (j) and (k).
Response	The reviewers note that the disclosure language in (i)-(k) is standard in all ASOPs and made no change.
Comment	One commentator requested clarification regarding gathering data not related to actuarial services or communications, and another asked whether it was intended that this section apply ASOP No. 41 requirements even where an actuarial opinion is not the end product.
Response	The reviewers revised section 1.2 to clarify that the standard applies only when data is to be used in performing actuarial services to address this issue.



**Actuarial Standard
of Practice
No. 24**

**Compliance with the
NAIC Life Insurance Illustrations
Model Regulation**

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 24 of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2016**

Doc. No. 184

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December 2016

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Compliance with the NAIC Life Insurance Illustrations Model Regulation

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 24

This document contains the final version of a revision of ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

Background

The ASB adopted ASOP No. 24, *Compliance with the NAIC Life Illustrations Model Regulation*, in 1995. Since the promulgation of the original standard, life insurance product innovation has continued. In 2007, ASOP No. 24 was revised to be consistent with the current ASOP format and to update and reflect current, appropriate actuarial practices with respect to illustrations prepared in compliance with the *Life Insurance Illustrations Model Regulation (Model)*. In 2015, the National Association of Insurance Commissioners released Actuarial Guideline 49 (AG 49) to clarify certain requirements of the *Model* related to policies with index-based interest credits and further amended AG 49 in September 2016. The ASOP was revised to reflect the changes effected through AG 49, to clarify certain guidance, and to be consistent with the current style and format used for ASOPs.

Exposure Draft

An exposure draft of this revision was issued in July 2016 with a comment deadline of September 30, 2016. Five comment letters were received and considered in making changes that were reflected in this final revised standard. For a summary of the issues contained in the exposure draft comment letters and the responses, see appendix 2.

There were no significant changes from the exposure draft.

The ASB thanks everyone who took time to contribute comments and suggestions on the exposure draft.

The ASB voted in December 2016 to adopt this standard.

Task Force to Revise ASOP No. 24

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 24

**COMPLIANCE WITH THE
NAIC LIFE INSURANCE ILLUSTRATIONS
MODEL REGULATION**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services pursuant to applicable law based on the National Association of Insurance Commissioners (NAIC) *Life Insurance Illustrations Model Regulation (Model)* and related NAIC actuarial guidelines or when performing professional services with respect to illustrations represented to be in accordance with the *Model*.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services to provide or support an actuarial certification pursuant to an applicable law based on the *Model*. The *Model* applies to illustrations, both for proposals and in-force policies, as described in the *Model*, for group and individual life insurance other than variable life insurance. The *Model* does not apply to individual and group annuity contracts, credit life insurance, and life insurance policies with no illustrated death benefits on any individual exceeding \$10,000. NAIC Actuarial Guideline 49 (AG 49) is related to the *Model* and applies to certain life insurance policies that are subject to the *Model* and that provide interest credits linked to an external index or indices.

This standard applies to actuaries when performing professional services with respect to illustrations in the absence of applicable regulations if the illustrations are to be represented as being in accordance with the *Model*.

This standard does not apply to actuaries when performing professional services with respect to the determination of **nonguaranteed elements** payable. Determination of these items, as well as illustrations not included in the scope of this ASOP, are covered by ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, or ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial services performed on or after April 30, 2017.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice. Definitions 2.2, 2.3, 2.6, 2.7, and 2.8 are intended to conform to those in the *Model*.

- 2.1 **Actual Experience**—Historical results and trends in those results.
- 2.2 **Currently Payable Scale**—A scale of **nonguaranteed elements** in effect for a policy form as of the preparation date of the illustration or declared to become effective within the next 95 days.
- 2.3 **Disciplined Current Scale**—A scale of **nonguaranteed elements**, certified annually by the **illustration actuary**, constituting a limit on illustrations currently being illustrated by an insurer that is reasonably based on actual recent historical experience and that satisfies the requirements set forth in the *Model*.
- 2.4 **Experience Factor**—A value or set of values that represents the **actual experience** of a policy form. Examples of **experience factors** include rates of mortality, expense, investment income, termination, and taxes.
- 2.5 **Experience Factor Class**—A group of policies for which **nonguaranteed elements** are determined by using common numerical values of a particular **experience factor**.
- 2.6 **Illustrated Scale**—A scale of **nonguaranteed elements** currently being illustrated that is not more favorable to the policyholder than the lesser of the **disciplined current scale** or the **currently payable scale**.
- 2.7 **Illustration Actuary**—An actuary who is appointed in accordance with the requirements set forth in the *Model*.
- 2.8 **Nonguaranteed Element**—Any element within an insurance policy that affects policy costs or values that is not guaranteed or not determined at issue. A **nonguaranteed element** may provide a more favorable value to the policyholder than that guaranteed at the time of issue of the policy. Examples of **nonguaranteed elements** include policy dividends, excess interest credits, mortality charges, expense charges, indeterminate premiums, and participation rates and maximum rates of return for indexed life insurance products.

- 2.9 **Nonguaranteed Element Framework**—The structure by which the insurer determines **nonguaranteed elements**. This includes the assignment of policies to **experience factor classes**, the method of allocating income and costs, and the structure of the formulas or other methods of using **experience factors**. For participating policies this would be the dividend framework defined in ASOP No. 15. For life policies within the scope of ASOP No. 2, the **nonguaranteed element framework** would include the concepts of policy class, determination policy, and anticipated **experience factors**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Regulatory Requirements**—The *Model* contains detailed instructions, technical requirements, and prohibitions regarding many aspects of illustrations. Actuaries providing professional services within the scope of this standard should be familiar with the *Model*, AG 49, any applicable state law based on the *Model* (including state variations), and this standard.
- 3.2 **Appointment as Illustration Actuary**—Before accepting an appointment as an **illustration actuary**, the actuary should determine that he or she meets the qualifications described in the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States*. The appointment should be in writing and should describe the scope of the **illustration actuary's** responsibilities and establish the effective date. Acceptance of or withdrawal from the position should also be in writing.
- 3.3 **Illustrated Scale Requirements**—The actuary should ensure that the **illustrated scale** meets the requirements imposed by the *Model* as follows.
- 3.3.1 **Currently Payable Scale**—The **illustrated scale** must not be more favorable to the policyholder than the **currently payable scale** at any duration.
- 3.3.2 **Disciplined Current Scale**—The **illustrated scale** must be no more favorable to the policyholder than the **disciplined current scale** at any duration.
- 3.3.3 **Interest Credited Rate**—For policies with interest credits linked to an external index or indices, the interest credited rate for the **illustrated scale** for each indexed account shall be limited in accordance with AG 49.
- 3.4 **Developing the Disciplined Current Scale**—The actuary should consider the following when developing the **disciplined current scale**:
- 3.4.1 **Assumptions Underlying the Disciplined Current Scale**—The actuary should use experience as analyzed within the insurer's **nonguaranteed element framework** when setting **experience factors** underlying the **disciplined current scale**. To the extent **actual experience** is determinable, available, and credible, the actuary should use **actual experience** when setting **experience factors** underlying the

disciplined current scale. When such suitable data are lacking, **experience factors** should be derived in a reasonable and appropriate manner from **actual experience** of other similar classes of business. Similar classes may be found within the same company, may be found in other companies, or may be from other sources, in that order of preference. When determining the extent to which **actual experience** is credible, the actuary should refer to ASOP No. 25, *Credibility Procedures*. As required by the *Model*, the **experience factors** underlying the **disciplined current scale** may not include any projected trends of improvement nor any assumed improvements in experience beyond the effective date of the **illustrated scale**, except as provided in section 3.8.

The actuary should consider the following when setting assumptions:

- a. Investment Return—The **experience factor** used for investment income (the investment return factor) underlying the **disciplined current scale** should be reasonably based on recent actual investment experience, net of default costs, of the assets supporting the policy block.

If interest credits are linked to an external index or indices, then the investment return factor is sensitive to business or economic cycles. In such cases, the actuary should consider an appropriate time frame commensurate with such cycles and the characteristics of the underlying index or indices in determining recent **actual experience**. When determining the investment return factor for policies within the scope of AG 49, actuaries should comply with limitations imposed on the assumed earned interest rate underlying the **disciplined current scale**.

The actuary should have a reasonable basis for allocating investment income to policies, whether using the portfolio, segmentation, investment generation, or any other method. The actuary should develop the investment return factors using the same method that is used to allocate investment income to policies. The investment return factors may be net of investment expenses or, alternatively, investment expenses may be treated separately as expenses.

The actuary should use procedures that have a reasonable theoretical basis for determining the investment return factors. In determining the investment return factors, the actuary should reflect the insurer's actual practice for **nonguaranteed elements** with respect to realized and unrealized capital gains and losses, investment hedges, policy loans, and other investment items.

- b. Mortality—The actuary should base the mortality **experience factors** on the insurer's mortality experience, if credible, adjusted for risk class. In setting mortality **experience factors**, the actuary should consider credible variations by age, gender, duration, marketing method, plan, size of policy,

policy provisions, risk class, and other items (or a combination thereof) consistent with the insurer's structure of mortality **experience factor classes**. To the extent that the insurer's **actual experience** is not sufficiently credible, the actuary should consider using other credible industry mortality experience, appropriately modified to reflect the insurer's underwriting practices. If no credible industry mortality experience is available, the actuary should use professional judgment in modifying other sources of information (for example, general population mortality tables) in order to obtain the mortality assumption.

- c. Persistence—The actuary should base the premium continuation and policy persistency rates on the insurer's **actual experience**, if credible, for this or similar policy forms. The actuary should consider credible variations by age, gender, duration, marketing method, plan, size of policy, policy provisions, risk class, and other items (or a combination thereof) consistent with the insurer's structure of persistency **experience factor classes**. To the extent that the insurer's recent experience is not credible, the actuary should consider using other credible industry experience such as that from LIMRA, appropriately modified to reflect the actuary's professional judgment regarding differences between the policy form and the basis for the industry experience.
- d. Direct Sales Expenses—The actuary should reflect agent commissions, overrides, and other direct compensation determined by formula or incurred as a consequence of sales in a manner consistent with new business activities that generate the cost and are excluded from the expense factors given in sections (e)(1), (2), and (3) below.
- e. All Other Expenses—As described in the *Model*, the actuary should consider whether the minimum expenses to be used in the calculation of the **disciplined current scale** for all policy forms during the certification year are based on sections (1), (2), or (3) below and are subject to the criteria that follow them:
 - 1. Fully Allocated—Unit expenses reflecting total expenses recently incurred by the insurer when applied to both in force or newly issued policies are considered fully allocated. Some expenses are direct in that they can be specifically related to a particular policy form. Other expenses, such as general overhead costs, are indirect. The actuary should charge direct expenses to the groups of policies generating the related costs. Indirect expenses should be fully allocated using reasonable principles of expense allocation. Nonrecurring costs, such as systems development costs, may be spread over a reasonable number of years (for example, system lifetime) in determining the allocable expenses for a particular year.

2. Marginally Allocated—Marginally allocated expenses are unit expenses calculated in a manner similar to fully allocated unit expenses except that indirect expenses, such as corporate overhead and general advertising, are not allocated to the policy forms.
3. Generally Recognized Expense Table (GRET)—GRET unit expenses are obtained from an industry expense study based on fully allocated expenses representing a significant portion of insurance companies and approved for use by the NAIC or by the commissioner.

If no GRET is approved and available, the *Model* requires the use of fully allocated expenses. If a GRET is approved and available, the *Model* allows the use of either a GRET or fully allocated expenses. The *Model* permits the use of marginally allocated expenses only to the extent that they generate aggregate expenses that are at least as large as those generated by a GRET.

The actuary should make the comparison and choice of expense factor bases in the aggregate for all policy forms. The actuary should use the same unit expense basis for all policy forms tested. For example, the actuary should not use marginal expenses for one policy form and fully allocated expenses for another policy form. Once the actuary selects the unit expense basis, the actuary should use that basis for the entire certification year. When calculating unit expenses, the actuary should select average policy size and volume of sales assumptions that are appropriate for the policy form.

- f. Taxes—The actuary should reflect all cash flows arising from applicable taxes. Income taxes should be recognized in accordance with their impact by duration in the development of the **disciplined current scale**. Non-income taxes that are classified as investment taxes may be treated as a deduction from the investment return or may be treated separately. Other categories of taxes, such as premium taxes or employment taxes, may be handled separately or included in the category of all other expenses, as outlined in section 3.4.1(e) above.

Details of taxation vary widely, depending on the application of law and regulation in various jurisdictions. The actuary should consider the insurer's actual practices for allocating taxes for **nonguaranteed elements** in determining the tax **experience factor**.

- g. Changes in Methodology—When an insurer changes its methodology in determining **nonguaranteed elements** (for example, changing from portfolio rate methodology to a new money rate methodology or adding a new underwriting class), the actuary should appropriately modify

assumptions underlying the **disciplined current scale** to reflect the new methodology.

- h. Other Lines of Business—If other lines of business are considered investments of the illustrated block of business, the actuary should consider whether cash flows originating in such lines are recognized in the assumptions underlying the **disciplined current scale**. In deciding whether and how to reflect these cash flows, the actuary should consider the time horizon of the investment/investor relationship and the insurer’s actual practice for reflecting these cash flows in determining **nonguaranteed elements**.

3.4.2 Relationship of Actual Experience to Disciplined Current Scale—The actuary should select assumptions underlying an insurer’s **disciplined current scale** that logically and reasonably relate to **actual experience** as reflected within the insurer’s **nonguaranteed element framework**. The actuary should reflect changes in experience once changes have been determined to be significant and ongoing.

Actual experience may exhibit improvements from year to year. As required by the *Model*, such trends in improvement may not be assumed to continue into the future beyond the effective date of the **disciplined current scale** underlying the illustration.

If trends indicate that significant and continuing deterioration in an **experience factor** has occurred or, in the actuary’s professional judgment, is likely to occur between the date of the experience study and the effective date of the **disciplined current scale** underlying the illustration, the actuary should recognize such deterioration in determining the assumptions to be used.

When an insurer introduces a change in underwriting practice (for example, adding a new underwriting class) that is not expected to change the insured population, the actuary should divide the **actual experience** into the new underwriting classes in such a way that **actual experience** is reproduced in the aggregate.

3.5 Requirements for Self-Support—The *Model* requires every policy form illustrated by an insurer to be self-supporting according to the assumptions underlying the insurer’s **disciplined current scale**. This requirement applies to the illustration of policies in force for less than one year.

The *Model* requires the following self-support test. At every illustrated point in time starting with the fifteenth policy anniversary (with the twentieth policy anniversary for second-or-later-to-die policies), the accumulated value of all policy cash flows, when using experience assumptions underlying the **disciplined current scale**, should be equal to or greater than the illustrated policyholder value, i.e., the cash surrender values and any other illustrated benefit amounts available at the policyholder’s election. When policies

expire according to their terms prior to 15 years (20 years for second-or-later-to-die policies), the **illustrated scale** should be self-supporting at the point of expiration.

Each illustration reflects underwriting classification, as well as certain factors that are subject to policyholder choice. The underwriting classification includes factors such as age, gender, and risk class. Policyholder choices reflected in the preparation of an illustration include, but are not limited to, the size of policy, premium payment pattern, dividend option, coverage riders, and policy loans.

When performing the self-support test for a policy form, the actuary may test the underwriting classification and policyholder choice factors in aggregate if, in the actuary's professional judgment and subject to the limitations of AG 49, such combinations would be appropriate. If testing is done in the aggregate, the actuary should select assumptions for the distribution between underwriting classes and policyholder choices that are based on **actual experience**, if available, recognizing possible shifts in distribution toward any portions of the business that do not meet the self-support test in their own right.

When performing the self-support test on policy forms with 1) interest credits linked to an external index or indices and 2) more than one available indexed account, actuaries must comply with the limitations on aggregation of indexed accounts imposed by AG 49, if applicable.

- 3.6 **Requirements to Prevent Lapse-Supported Illustrations**—The *Model* prohibits illustration of **nonguaranteed elements** in policies that are deemed to be lapse-supported and establishes a lapse-support test to demonstrate compliance with this requirement. The lapse-support test requires that the policy form in question be self-supporting under the same assumptions and with the same level of aggregation as described in section 3.5, changing only the persistency assumption. The modified persistency rate assumption will use the persistency rates underlying the **disciplined current scale** for the first five policy years and 100% policy persistency thereafter. In performing the lapse-support test for a policy form, the actuary should assume that benefits that are conditional only upon policy continuation will be provided to all policies in force at the end of year five and surviving to the date of such benefits. For policy forms that provide benefits that are conditional upon certain premium payment patterns, the actuary should consider whether all policies in force to the end of year five will qualify for such benefits.

As stated in the *Model*, policy forms that can never develop nonforfeiture values, such as certain term coverages, are exempt from the lapse-support test. The *Model* requires that these policy forms pass the self-support requirement.

- 3.7 **Illustrations on Policies In Force One Year or More**—The **illustration actuary** is required to annually certify that the **disciplined current scale**, for both new business and in force illustrations, complies with the *Model* and this standard. The *Model* requires that the **illustrated scale** be no more favorable to the policyholder than the lesser of the **currently payable scale** and the **disciplined current scale**. The **disciplined current scale**, for a

policy in force one year or more, continues to be in compliance with the *Model* and this standard, if any of the following apply:

- a. the **currently payable scale** has not been changed since the last certification and the **illustration actuary** determines that experience since the last certification does not warrant changes in the **disciplined current scale** that would make it significantly less favorable to the policyholder; or
- b. the **currently payable scale** has been changed since the development of the **disciplined current scale** most recently certified only to the extent that changes are reasonably consistent with changes in experience assumptions underlying the **disciplined current scale**; or
- c. the **currently payable scale** has been made less favorable to the policyholder since the last certification and the change is more than the change in the current experience would dictate.

If none of the conditions in (a), (b), or (c) above is met, the **illustration actuary** should (1) review the **experience factors** underlying the **disciplined current scale** and revise as necessary, and (2) develop a new **disciplined current scale** for this policy form.

In the context of in-force illustrations for policies receiving distributions of accumulated surplus or prior gains (including those resulting from the formation of a closed block), the actuary should consider including these distributions both in the **disciplined current scale** and in the **illustrated scale**, only to the extent that (1) such distributions are currently being paid to the policyholders by the insurer, and (2) the insurer has indicated its intent and ability to continue to do so for the foreseeable future. Such accumulated surplus or prior gains may be used in conducting the tests for self-support and lapse-support.

3.8 **Changes in Practice**—An insurer may introduce certain changes in the way it conducts its business, which may have significant positive or negative effects on future experience. If the action has already occurred, but not enough time has elapsed for it to be reflected in the insurer's **actual experience**, it may nevertheless be reflected in the assumptions underlying the **disciplined current scale**. The actuary should consider recognizing any changes, such as the following, to the extent known to the actuary:

- a. a change in underwriting standards, such as introducing preferred risk, guaranteed issue, or simplified underwriting;
- b. a change in commission levels;
- c. a reduction in staff;
- d. a change in investment policies, such as changes in hedging activities and changes in asset class allocations; and

- e. new or revised reinsurance agreements.

In order to be reflected in the **disciplined current scale**, such changes should have already been made and not simply be planned for in the future.

- 3.9 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.10 Documentation—The documentation that supports the actuarial certification described in section 4.1 with respect to the construction of the **disciplined current scale**, maintained in conformance with ASOP No. 41, *Actuarial Communications*, should include the following:
 - a. description of, and rationale for, the investment income, mortality, persistency, expense, tax, and other assumptions;
 - b. description of, and rationale for, any other calculation methods and assumptions used to carry out the tests and demonstrations described herein; and
 - c. demonstration that the self-support and lapse-support tests have been met.

Section 4. Communications and Disclosures

- 4.1 Certification—The *Model*¹ requires the **illustration actuary** to certify annually that the **illustrated scale** and the **disciplined current scale** are in compliance both with the requirements as set forth in the *Model* and with the requirements set forth in this ASOP. Certifications should also be made for newly introduced forms before a new policy form is illustrated.²

The certification should disclose the following:

- a. for business issued in the last five years and within the scope of the certification, whether or not the **currently payable scale** has been reduced since the last certification for reasons unrelated to experience changes;³
- b. the choice of expense assumptions as discussed in section 3.4.1(e);⁴
- c. any inconsistencies between the illustrated **nonguaranteed elements** for new policies and similar in-force policies;⁵ and

¹ As stated in *Model* sections 11.B, C(5)-(6), and D(1)(a).

² As stated in *Model* section 11.D(1)(b).

³ As stated in *Model* section 11.C(5).

⁴ As stated in *Model* section 11.C(6).

- d. any inconsistencies between the illustrated **nonguaranteed elements** for new and in-force policies and the **nonguaranteed element** amounts actually paid, credited, or charged to the same or similar forms.⁶

As required by the *Model*,⁷ if an **illustration actuary** is unable to certify the **illustrated scale** for any policy form the insurer intends to use, the actuary should notify the board of directors of the insurer and the commissioner promptly of his or her inability to certify.

- 4.2 **Notice of Error in Certification**—As required by the *Model*,⁸ if an error in a previous certification is discovered, the **illustration actuary** (or successor **illustration actuary**) shall promptly notify the board of directors of the insurer and the commissioner.

The certification should be considered in error if the certification would not have been issued or would have been materially altered had the error not been made. The certification should not be considered to be in error solely because of data that become available, or information concerning events that occurred, subsequent to the certification date.

- 4.3 **Disclosures**—The actuary should include the following, as applicable, in the certification:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

⁵ As stated in *Model* section 11.C(5).

⁶ See note 5 above.

⁷ As stated in *Model* section 11.E.

⁸ As stated in *Model* section 11.D(2).

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

Sales illustrations have been of concern to regulators for over a century, going back at least to the Armstrong Commission (1905-1906). Developments prior to 1995 involving insurance products, illustration technology, and the volatility of financial markets led to heightened concern and to the adoption of the NAIC *Life Insurance Illustrations Model Regulation (Model)*.

Actuaries have been involved in the process of establishing scales of dividends and other nonguaranteed elements to be illustrated by insurance companies for decades. Until the 1980s, nonguaranteed elements were essentially synonymous with participating dividends, and the sources of scales of illustrated dividends were tables prepared by the respective insurance companies. Since that time, there has been a proliferation of policies with nonguaranteed elements other than dividends. Improving technology has also made possible the development of software that enables insurance agents to produce sales illustrations based on a variety of assumptions, potentially with little or no direct involvement on the part of the insurer. The *Model* assigns major responsibilities regarding compliance to an actuary who is appointed by the insurer.

Illustrations generally have three primary uses:

1. to show the buyer the mechanics of the policy, i.e., how a particular financial design or concept works, and how policy values or premium payments may change over time;
2. to compare the cost or performance of different policies; and
3. to show how the policy fits into the policyholder's financial plan.

A sales illustration simply shows the performance of one particular scale of nonguaranteed elements into the future. Actual nonguaranteed elements will almost certainly vary from those illustrated. Different policies will experience different variances from illustrated values.

Current Practices

Since the promulgation of the original standard in 1995, product innovation has continued as pricing structures have been refined, secondary guarantees have been developed, an increasing variety of equity-indexed and other indexed life insurance products have been developed, and

additional new underwriting classes have been added. Until the release of Actuarial Guideline 49 (AG 49), it had been common practice to illustrate these new products pursuant to the *Model* and this standard as it existed. With the introduction of AG 49, illustrations of contracts providing interest credits linked to an external index or indices will be subject to AG 49 and this updated standard.

Varying degrees of flexibility are provided by insurers to their agents in customizing sales illustrations, depending somewhat on whether the producers are brokers or career agents. Generally, the tools that insurers provide allow flexibility with respect to column selection and formats, variations on nonguaranteed elements, and different premium patterns. Along with this flexibility may be the requirement that the buyer also be given a ledger illustration in an insurer-approved format.

Appendix 2

Comments on Exposure Draft and Responses

The exposure draft of this revised ASOP, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*, was issued in June 2016 with a comment deadline of September 30, 2016. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force to Revise ASOP No. 24 carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term “reviewers” in appendix 2 includes the Task Force to Revise ASOP No. 24, the Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.4.1(c), Assumptions Underlying the Disciplined Current Scale	
Comment	One commentator said that the Life Insurance Marketing and Research Association is now LIMRA.
Response	The reviewers agree and made this change.
Section 3.4.2, Relationship of Actual Experience to Disciplined Current Scale	
Comment	One commentator inquired if the removal of the word “promptly” reflected a change in guidance relative to how quickly changes in experience should be reflected when determined to be significant and ongoing.
Response	The reviewers believe that the guidance is substantially unchanged, and therefore made no change.
Section 3.5, Requirements for Self-Support	
Comment	One commentator noted that if more than one Benchmark Index Account is used for an illustrated policy, under the latest adopted version of AG 49 each set of index accounts corresponding to each Benchmark Index Account must independently pass the self-support and lapse-support tests, whereas the exposure draft indicates that testing in the aggregate would be permissible.
Response	The reviewers agree and modified this section to reflect the comment.

Section 3.6, Requirements to Prevent Lapse-Supported Illustrations	
Comment	One commentator recommended including a drafting note with respect to the wording change to ensure that practitioners understand that the change was made to clarify rather than to reflect a change in guidance.
Response	The reviewers believe that the wording changes clarify the guidance with respect to the lapse-support test and therefore made no change in response to this comment.
Comment	One commentator posed specific questions related to the application of the lapse-support test, one involving the use of experience beyond the fifth policy year when testing previously issued policy forms, and a second involving the impact of reinsurance on the lapse-support and self-support tests.
Response	The reviewers believe that the current language covers these issues at the appropriate level of detail and therefore made no change in response to this comment. This comment has been referred to the Academy's Life Illustration Work Group for possible inclusion in a practice note.
Comment	One commentator suggested clarifying the application of the lapse-support test to flexible premium policy forms that are not funded to keep the policy in force for its full term.
Response	The reviewers believe that the current language covers these issues at the appropriate level of detail and therefore made no change in response to this comment. This comment has been referred to the Academy's Life Illustration Work Group for possible inclusion in a practice note.
Section 3.8, Changes in Practice	
Comment	One commentator suggested changing section 3.8 to clarify how the last sentence is associated with the rest of that section.
Response	The reviewers agree and revised this section.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard of
Practice No. 25**

Credibility Procedures

Revised Edition

**Developed by the
Credibility Task Force of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2013**

Doc. No. 174

ASOP No. 25—December 2013

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ASOP No. 25—December 2013

December 2013

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Credibility Procedures

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 25

This document is the final version of a revision of ASOP No. 25 now titled, *Credibility Procedures*.

Background

The original standard, adopted in 1996, was a product of the Health Committee and the Casualty Committee of the ASB. The scope of the standard was limited to accident and health, group term life, and property/casualty coverages.

In 2011, the ASB asked the Life Committee to consider whether the scope of ASOP No. 25 should be expanded to incorporate additional practice areas. The Life Committee agreed that the scope of the ASOP could be expanded. The Board asked that a multi-discipline task force be formed under the direction of the General Committee to begin drafting an exposure draft. A task force was then created that included actuaries from the life, health, pension, and property/casualty practice areas.

First Exposure Draft

The first exposure draft of this revised ASOP was issued in September 2012 with a comment deadline of December 31, 2012. The Credibility Task Force carefully considered the 20 comment letters received and made changes to the language in several sections in response. The most significant change from the first exposure draft was the revision of section 1.2, Scope, to clarify in what situations the standard applies. In addition, the purpose and use of credibility procedures was clarified, in particular regarding the continued need for professional judgment.

Second Exposure Draft

The second exposure draft of this ASOP was issued in June 2013, with a comment deadline of September 30, 2013. Nine comment letters were received. The Task Force carefully considered all comments received and made clarifying changes to the language in several sections. For a summary of the substantive issues contained in the second exposure draft comment letters and the task force's responses, please see appendix 2. In addition, the task force made a clarifying change to the wording of the scope section to keep it appropriately focused. There were no major changes from the second exposure draft.

ASOP No. 25—December 2013

The ASB thanks everyone who took the time to contribute comments on the exposure drafts.

The ASB voted in December 2013 to adopt this standard.

ASOP No. 25—December 2013

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 25

CREDIBILITY PROCEDURES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to actuaries when performing professional services with respect to selecting or developing **credibility procedures** and the application of those procedures to sets of data.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services involving **credibility procedures** in the following situations:
 - a. when the actuary is required by applicable law (statutes, regulations, and other legally binding authority) to evaluate **credibility**;
 - b. when the actuary chooses to evaluate the **credibility of subject experience**, or states in any related actuarial communication that **credibility** has been evaluated in accordance with this ASOP;
 - c. when the actuary is blending **subject experience** with other experience; or
 - d. when the actuary represents the data being used as statistically or mathematically credible.

If the actuary determines that the guidance in this standard conflicts with ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, ASOP No. 35 will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for any professional services with respect to **credibility procedures** performed on or after May 1, 2014.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Credibility**—A measure of the predictive value in a given application that the actuary attaches to a particular set of data (*predictive* is used here in the statistical sense and not in the sense of predicting the future).
- 2.2 **Credibility Procedure**—A process that involves the following:
- a. the evaluation of **subject experience** for potential use in setting assumptions without reference to other data; or
 - b. the identification of **relevant experience** and the selection and implementation of a method for blending the **relevant experience** with the **subject experience**.
- 2.3 **Full Credibility**—The level at which the **subject experience** is assigned full predictive value, often based on a selected confidence interval.
- 2.4 **Relevant Experience**—Sets of data, that include data other than the **subject experience**, that, in the actuary’s judgment, are predictive of the parameter under study (including but not limited to loss ratios, claims, mortality, payment patterns, persistency, or expenses). **Relevant experience** may include **subject experience** as a subset.
- 2.5 **Risk Characteristics**—Measurable or observable factors or characteristics that are used to assign each risk to one of the risk classes of a **risk classification system**.
- 2.6 **Risk Classification System**—A system used to assign risks to groups based upon the expected cost or benefit of the coverage or services provided.
- 2.7 **Subject Experience**—A specific set of data drawn from the experience under consideration for the purpose of predicting the parameter under study.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Purpose and Use of Credibility Procedures**—**Credibility procedures** covered by this standard are used for two purposes: 1) to evaluate **subject experience** for potential use in setting assumptions without reference to other data; and 2) to improve the estimate of the parameter under study. **Credibility procedures** may be used for tasks such as pricing, ratemaking, prospective experience rating, and reserving.

3.2 **Selection or Development of Credibility Procedure**—The actuary should use an appropriate **credibility procedure** when determining if the **subject experience** has **full credibility** or when blending the **subject experience** with the **relevant experience**. The procedure selected or developed may be different for different practice areas and applications. Additional review may be necessary to satisfy applicable law.

In selecting or developing a **credibility procedure**, the actuary should consider the following criteria:

- a. whether the procedure is expected to produce reasonable results;
- b. whether the procedure is appropriate for the intended use and purpose; and
- c. whether the procedure is practical to implement when taking into consideration both the cost and benefit of employing a procedure.

The actuary should apply **credibility procedures** that appropriately consider the characteristics of both the **subject experience** and the **relevant experience**. The actuary should consider the predictive value of more recent experience as compared to experience from earlier time periods.

3.3 **Selection of Relevant Experience**—The actuary should exercise professional judgment and use care in selecting and using **relevant experience**. Such **relevant experience** should have characteristics similar to the **subject experience**. Characteristics to consider include items such as demographics, coverages, frequency, severity, or other determinable **risk characteristics** that the actuary expects to be similar to the **subject experience**. If the proposed **relevant experience** does not meet and cannot be adjusted to meet such criteria, it should not be used.

The actuary should consider the extent to which **subject experience** is included **in relevant experience**. If **subject experience** is a material part of **relevant experience**, the actuary should use professional judgment in deciding whether and how to use that **relevant experience**.

In some instances, no **relevant experience** is available to the actuary. In this situation, the actuary should use professional judgment, considering available **subject experience**, in setting an estimate of the parameter under study.

3.4 **Professional Judgment**—The actuary should use professional judgment when selecting, developing, or using a **credibility procedure**. The use of **credibility procedures** is not always a precise mathematical process. For example, in some situations, an acceptable procedure for blending the **subject experience** with the **relevant experience** may be based on the actuary assigning full, partial, or zero **credibility** to the **subject experience** without using a rigorous mathematical model.

3.5 **Homogeneity of Data**—In carrying out **credibility procedures**, the actuary should consider the homogeneity of both the **subject experience** and the **relevant experience**. Within each set of experience, there may be segments that are not representative of the experience set as a whole. The predictive value can sometimes be enhanced by separate treatment of these segments. The actuary should also consider the balance between the homogeneity of the data and the size of the data set.

Section 4. Communications and Disclosures

- 4.1 **Disclosure**—Whenever appropriate in the actuary’s professional judgment, the actuary should disclose the **credibility procedures** used and any material changes from prior **credibility procedures**. The actuary should also include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Historical Development

The concept of credibility has been a fundamental part of actuarial practice since the beginning of the profession. Applications of credibility procedures have recognized the traditional concerns regarding the proper balance between responsiveness and stability. Early discussions of credibility tended to focus on estimating mean claim frequency using classical and empirical credibility procedures. The earliest recorded paper on this subject was, “How Extensive a Payroll Exposure Is Necessary to Give a Dependable Pure Premium,” by Albert H. Mowbray (see Volume I of the *Proceedings of the Casualty Actuarial and Statistical Society* published by the Casualty Actuarial Society in 1914). Later writers have developed formulas for the credibility of claim severity and for the credibility of total losses including Bayesian credibility procedures. Credibility concepts have also been used in other actuarial work.

Current Practices

A variety of approaches are used in credibility procedures. In some cases, the approach is based on judgment; in other cases, mathematical models are used. Some selected mathematical credibility procedures are discussed below.

Classical Credibility Procedures

Classical credibility procedures make assumptions as to the form of the underlying probability distribution. From this probability distribution function, the appropriate number of claims, amount of premium, or other measure of volume is calculated such that the probability that the subject loss experience is within a specified percentage (r) of the expected value is equal to a specified parameter (p). This measure of volume is the full credibility standard.

One such approach that assumes that claims follow a Normal distribution is Limited Fluctuation Credibility. In this approach, partial credibility assigned to the subject experience is based on the square root of the ratio of actual claims to the full credibility standard.

Empirical Credibility Procedures

Empirical credibility procedures measure the statistical relationships of the subject experience to its mean and to comparable experience of prior experience periods, without reference to the underlying distribution.

Bayesian Credibility Procedures

Bayesian analysis procedures merge prior distributions representing the statistical information of the relevant experience with the statistical information of the subject experience to produce posterior distributions that reflect both. Bayesian credibility procedures provide a least squares approximation to the mean of the *a posteriori* distribution that would result from a Bayesian analysis.

One example of the application of Bayesian credibility is Greatest Accuracy Credibility, which is also referred to as linear Bayesian credibility or Bühlmann credibility. In Greatest Accuracy Credibility, partial credibility is assigned to the subject experience using formulas of the form $n/(n+k)$, where n is the volume of subject experience and k is a parameter that may be derived from variances in the subject and relevant experience.

Emerging Practice Involving Statistical Models

More recent advancements in the application of credibility theory incorporate credibility estimation into generalized linear models or other multivariate modeling techniques. The most typical forms of these models are often referred to in literature as generalized linear mixed models, hierarchical models, and mixed-effects models. In such models, credibility can be estimated based on the statistical significance of parameter estimates, model performance on a holdout data set, or the consistency of either of these measures over time.

Credibility Bases

The most commonly used bases for determining credibility are numbers or amounts of claims, losses, premiums, and exposures.

Credibility Procedures for Ratemaking/Pricing

The sample size used for full credibility sometimes is based on the variance of an assumed underlying probability distribution. If using an assumed frequency distribution, the actuary usually adjusts the required sample size to recognize variation in claim size or other factors.

Credibility Procedures for Prospective Experience Rating

Prospective experience rating formulas assign credibility to actual experience of a single risk or a group of risks (the subject experience). In some instances, the subject experience may be subdivided into different components, for example, primary and excess losses, with different credibility levels appropriate for each piece.

More Information

Expanded discussion of the use of credibility procedures by actuaries setting assumptions can be found in various publications of the American Academy of Actuaries, the Society of Actuaries, the Casualty Actuarial Society, and other similar actuarial professional organizations.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of ASOP No. 25, *Credibility Procedures*, was issued in June 2013 with a comment deadline of September 30, 2013. Nine comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Credibility Task Force and the General Committee of the Actuarial Standards Board carefully considered all comments received, and the General Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Task Force, General Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator stated that the ASOP does not discuss instances when applicable law requires the actuary to depart from the guidance of the ASOP.
Response	The reviewers made no change and refer the commentator to the last paragraph of section 1.2 and section 4.1(a) as well as ASOP No. 41, <i>Actuarial Communications</i> .
Comment	One commentator suggested that the ASOP should contain more specific discussion on how to consider different data sources, how to assign predictive value and reliance, and other guidance.
Response	The reviewers made no change and note ASOPs are intended to give general guidance rather than specific “how to” instructions.
Comment	One commentator suggested that wording be added to require a disclosure when the credibility of data has not been evaluated.
Response	The reviewers made no change, as they believe this would broaden the ASOP to mean that actuaries always need to consider the use of credibility procedures when the intent of section 1.2 is to limit the applicability of the ASOP to certain situations. Note: ASOP No. 23, <i>Data Quality</i> , provides guidance on selection of data.

ASOP No. 25—December 2013

SECTION 2. DEFINITIONS	
Section 2.3, Full Credibility	
Comment	One commentator suggested specifying that “[a]t full credibility, the relevant experience is assigned no predictive value beyond what is already provided by subject experience.”
Response	The reviewers believe section 2.3 is sufficiently clear and made no change.
Comment	One commentator suggested that there should be a requirement that when the term “fully credible” is used, it should “be appropriately modified by describing the error tolerance and confidence level which was used to test for full credibility.”
Response	The reviewers believe the definition is sufficiently clear and made no change.
Section 2.4, Relevant Experience	
Comment	One commentator suggested defining the phrase “parameter under study.”
Response	The reviewers do not believe it is necessary to define this term.
Section 2.5, Risk Characteristics	
Comment	One commentator suggested changes to the definition.
Response	The reviewers believe that the definition is appropriate and also consistent with ASOP No. 12, <i>Risk Classification</i> , section 2.8, and, therefore, made no change.
Section 2.6, Risk Classification System	
Comment	Two commentators suggested changes to the definition.
Response	The reviewers note that the definition is appropriate and also consistent with ASOP No. 12, section 2.10 and, therefore, made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Purpose and Use of Credibility Procedures	
Comment	One commentator suggested adding more guidance about the use of subject and relevant experience.
Response	The reviewers believe that section 3.3 provides appropriate guidance.
Comment	Two commentators point out that “valuation” is a life insurance term and suggest adding “reserving” to the list.
Response	The reviewers note that the list is not intended to be all inclusive, but note that “reserving” is likely to be correctly interpreted by all. Therefore, the reviewers are replacing the word valuation with reserving.
Comment	One commentator suggested substituting a new term for “expected value” in section 3.1, since the term is undefined and unused in the definition section.
Response	The reviewers agree and replaced the term with wording that is consistent with wording used in the definition section.

ASOP No. 25—December 2013

Section 3.2, Selection of Credibility Procedure	
Comment	One commentator suggests replacing “when blending” with “when blending or grading.” Another commentator suggests moving to “when combining.”
Response	The reviewers disagree and made no change as they believe that grading is the result of blending with factors that vary by duration.
Comment	One commentator believes the wording should be expanded to address predictive modeling.
Response	The reviewers disagree and made no change. The reviewers note that this standard addresses traditional credibility theory. While predictive modeling is addressed in the appendix, it is not explicitly referenced in the standard. To the extent traditional credibility theory per the scope of this standard is used as part of predictive modeling analysis, it is up to the actuary to determine if such work is covered by the standard.
Comment	One commentator suggests a cross reference to section 4.1(a) in regards to when methodology is prescribed by law.
Response	The reviewers note that the scope section includes a reference to section 4 for the case where methodology is prescribed by law, and made no change.
Comment	One commentator suggests moving “the actuary should consider the predictive value of more recent experience” to section 3.3.
Response	The reviewers made no change and note that this guidance applies to both subject experience and relevant experience.
Comment	One commentator suggested adding a sentence describing possible alternatives to credibility procedures, which may include statistical modeling approaches.
Response	The reviewers made no change and note that descriptions of various approaches are in appendix 1.
Section 3.3, Selection of Relevant Experience	
Comment	One commentator suggests adding underwriting to the list of considerations.
Response	The reviewers believe that underwriting is implicitly included in the category of “other determinable risk characteristics” and made no change.
Comment	One commentator questions how predictive modeling fits into the discussion.
Response	The reviewers note that predictive modeling is not explicitly addressed by this standard. However, to the extent credibility procedures within the scope of this standard are used as part of predictive modeling, the standard applies.
Comment	One commentator suggests that relevant experience be required to be fully credible.
Response	The reviewers disagree and note that fully credible experience does not always exist.
Comment	Many commentators addressed the appropriateness of the second paragraph in section 3.3.
Response	The reviewers believe that the consideration is an important one, but have removed specific guidance other than to note that professional judgment is called for.

ASOP No. 25—December 2013

Comment	One commentator suggested defining the word “material,” which appeared in front of the phrase “part of relevant experience.”
Response	The term “materiality” is discussed in ASOP No. 1, section 2.6, and therefore the term was not added to the definitions section in this standard.
Comment	One commentator suggested that wording should be added to “direct the actuary to assess the degree to which the relevant experience is predictive.”
Response	The reviewers disagree and made no change, and refer the commentator to section 3.4.

Section 3.4, Professional Judgment

Comment	One commentator suggests removing the reference to zero credibility here and from the standard entirely.
Response	The reviewers disagree and note that the scope statement specifically includes certain cases of zero credibility.

Section 3.5, Homogeneity of Data

Comment	One commentator suggests that additional wording be added to address the balance between the size of the data set and the homogeneity of the data.
Response	The reviewers agree and made the change.

APPENDIX 1

Comment	One commentator objected to the use of the phrase “greatest accuracy credibility,” suggesting that it was not appropriate language and may sound grandiose to statisticians.
Response	The reviewers made no change to the terminology “greatest accuracy credibility” as this is the primary name given to the credibility approach that is also referred to as the Bühlmann approach (in multiple sections of the American Academy of Actuaries’ July 2008 Credibility Practice Note).
Comment	One commentator recommended changing the title “Emerging Practice Involving Generalized Linear Models” to “Emerging Practice Involving Statistical Models.”
Response	The reviewers agree and made the change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 26**

**Compliance with Statutory and Regulatory
Requirements for the Actuarial Certification of
Small Employer Health Benefit Plans**

**Developed by the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
October 1996**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 144)

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November 1996

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 26

This booklet contains the final version of Actuarial Standard of Practice (ASOP) No. 26, *Compliance with Statutory and Regulatory Requirements for the Actuarial Certification of Small Employer Health Benefit Plans.*

Background

Recently, statutes and regulations have been enacted by a majority of states that have imposed various constraints on carriers for small employer health benefit plans. These statutes and regulations often require an actuarial certification that a small employer carrier is in compliance with the statutory or regulatory constraints. This is a new area of practice for actuaries; therefore, this actuarial standard of practice has been developed to provide guidance for actuaries preparing such certifications.

The first draft of this standard was exposed for review in October 1995, with a comment deadline of March 29, 1996. Thirty-five letters of comment were received. Additionally, the Health Committee of the ASB, as the drafting committee of this standard, presented a workshop on the proposed standard at a Society of Actuaries meeting in June 1996. The committee took very seriously its responsibility to review all of the comments it received regarding the exposure draft. Most of the comments exhibited a great deal of thought, and many of the suggestions made were incorporated into the final standard. However, no substantive positions taken in the exposure draft were changed. The committee believes that the final standard—like that of the exposure draft—correctly reflects the ASB's mission to provide guidance relating to the actuarial certifications of compliance required by state laws and regulations. (For a detailed discussion of the issues raised in the comment letters, and the committee's responses to such, please see appendix 2. Note in particular the discussion on p. 11 regarding the fact that this standard imposes a higher documentation requirement than those required by some states.)

Format Changes

A number of format changes have also been made since publication of the exposure draft. The ASB voted in May 1996 to change the format of all future actuarial standards of practice. Thus, sections 3 and 4 now form an appendix titled, Background and Current Practices. (Appendix 1 of this standard contains sections 3 and 4 of the exposure draft.) Further, sections 5 and 6 of the exposure draft have now been renumbered as sections 3 and 4. The “new” sections 3 and 4, along with sections 1 and 2, now form the actual standard of practice. The heading *Preamble*, which used to apply to the first four sections of the standard, has been deleted. The board made these format changes to help the reader distinguish between a standard's substantive requirements and language intended for general information.

The Health Committee thanks everyone who provided input during the exposure process. The comments were helpful in making revisions. The ASB voted in October 1996 to adopt the final standard.

Health Committee of the ASB

Ted A. Lyle, Chairperson

Robert M. Duncan Jr.	Mark D. Peavy
Robert J. Ingram	John A. Price
Mary J. Murley	Richard J. Shepler
William H. Odell	Joe P. Sternfeld
David F. Ogden	

Actuarial Standards Board

Richard S. Robertson, Chairperson

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Harper L. Garrett Jr.	Harry L. Sutton Jr.
David G. Hartman	James R. Swenson

ACTUARIAL STANDARD OF PRACTICE NO. 26

COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS FOR THE ACTUARIAL CERTIFICATION OF SMALL EMPLOYER HEALTH BENEFIT PLANS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—Many states require the filing of an actuarial certification of compliance stating that the rating methods and other actuarial practices applicable to carriers for small employer health benefit plans comply with relevant statutes, regulations, or other mandatory requirements set forth in any applicable, generally distributed interpretative materials. (Hereafter, the phrase *regulatory requirements* will refer to such statutes, regulations, and/or applicable, generally distributed interpretative materials.) The purpose of this actuarial standard of practice is to guide the preparer of a certification of compliance by identifying the issues to be addressed and the required documentation regarding relevant regulatory requirements.
- 1.2 **Scope**—This standard applies to actuarial certifications of compliance prescribed by regulatory requirements that a carrier's rating methods and other actuarial practices applicable to small employer health benefit plans comply with statutory and regulatory rating constraints. Since specific regulatory requirements for such certifications vary between jurisdictions, the actuary must satisfy the specific regulatory requirements of a jurisdiction in preparing the certification.

This standard applies to rating methods and other actuarial practices only and does not apply to other market conduct activities (e.g., marketing, enrollment and billing procedures, and renewal notices) that may be covered under regulatory requirements.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for all certifications rendered on or after January 1, 1997, regardless of the time period covered.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Soundness**—Small employer health benefit plan premium rates are actuarially sound if, for business in the state for which the certification is being prepared and for the period covered by the certification, projected premiums in the aggregate, including expected reinsurance cash flows, governmental risk adjustment cash flows, and investment income, are adequate to provide for all expected costs, including health benefits, health benefit settlement expenses, marketing and administrative expenses, and the cost of capital.

For either a retrospective or a prospective certification, the determination of actuarial soundness is based on information available at the time the premium rates were established.

- 2.2 **Carrier**—Any entity subject to state regulation that offers health benefit plan coverage for sale. *Carrier* includes an insurance company, a prepaid hospital or medical service plan, a fraternal benefit society, a health maintenance organization, and any other entity offering for sale a plan of health insurance or health benefits.
- 2.3 **Cost of Capital**—The rate of return that capital could earn in an alternative investment of equivalent risk. The source of the capital may be internal or external.
- 2.4 **Health Benefit Plan**—Any hospital or medical policy or certificate; medical expense insurance; or subscriber contract or contract of insurance provided by a prepaid hospital, medical service plan, or health maintenance organization.
- 2.5 **Small Employer**—Any person, firm, corporation, partnership, or organization that employs a number of eligible employees within a statutorily specified range that has an upper bound and that satisfies any other statutorily defined criteria.
- 2.6 **Subsequent Events**—Subsequent events are events (1) that have occurred since the end of the certification period and before the date of the certification, (2) that could materially affect current or future certifications rendered, and (3) about which the actuary has knowledge.

Section 3. Analysis of Issues and Recommended Compliance

- 3.1 Introduction—The purpose of the actuarial certification of compliance is to satisfy applicable regulatory requirements. This certification should be appropriate to the circumstances. The actuary should review the applicable regulatory requirements, which generally contain a statement of purpose that the actuary should keep in mind when preparing the certification of compliance. The actuary should also consider any other mandatory requirements set forth in any applicable, generally distributed interpretive materials issued by regulators in support of the applicable regulatory requirements, and should satisfy those requirements when preparing the certification.
- 3.2 Testing of Rates for Compliance with Rating Constraints—The actuary should ensure that sufficient testing has been done so that he or she is reasonably satisfied that there are no material violations of the rating constraints. Such testing should be detailed enough to assure that an appropriate range of health benefit plan designs and demographic characteristics has been tested.
- 3.3 Analysis of Rates for Actuarial Soundness—If required, the actuary should perform sufficient analysis so that he or she is reasonably satisfied the rates are actuarially sound. For a *retrospective* certification of actuarial soundness, the certification relates to the premium rates in effect during the time period to which the certification applies, and the determination of actuarial soundness should be based on information that was reasonably available at the point in time when the premium rates were established. For a *prospective* certification of actuarial soundness, the certification relates to the premium rates developed for the time period to which the certification applies.
- 3.4 Documentation of Compliance—Documentation should be available to support the actuarial certification, and should include the items listed in sections 3.4.1–3.4.3 below, if applicable. The state will define what documentation should be submitted, if any.
 - 3.4.1 Rating Methods and Underwriting Practices—Materials that have been reviewed in order to certify compliance with requirements for rating methods and new business and renewal underwriting practices, such as the following:
 - a. a description of the carrier's rating methods and new business and renewal underwriting practices; this should include any exceptions or variations that may be used for the business or any subset of the business for which rates are determined;
 - b. when actuarial soundness is being certified, experience, reinsurance, pooling considerations, and other relevant data used in the analysis of the business for which rating practices are being certified;
 - c. the health benefit plan contracts and certificates;
 - d. the sales brochures and other materials for each health benefit plan;

- e. the rating manual;
 - f. formulas for calculating any group's rate from the rating manual, including both new business rates and renewal rates;
 - g. a sufficient sample of test calculations of the rating formulas to verify that the rates actually being charged are in accordance with the rating manuals;
 - h. a description of any material changes to previously reviewed health benefit plan contracts and certificates that were not mandated by regulatory requirements;
 - i. information concerning any policy fees, administrative charges, or application charges that may apply to any group in any class of business, regardless of whether such fees or charges are remitted to the carrier; and
 - j. any other information prescribed by the regulatory requirements.
- 3.4.2 **Demonstration of Compliance with Rating Constraints**—A written demonstration supporting the actuarial certification that the rates are in compliance with applicable regulatory requirements. The demonstration should include an explanation as to how items such as classes of business, average rates, rating bands, and rate increases comply with statutory and regulatory rating constraints.
- 3.4.3 **Demonstration of Compliance with Actuarial Soundness**—If a certification of actuarial soundness is required, a written demonstration supporting the determination, including documentation of underlying assumptions.
- 3.5 **Time Period Covered by Certification**—The actuary's certification that the rates are in compliance should apply to the time period specified by applicable regulatory requirements. In the absence of any specification in such regulatory requirements, the actuary should generally certify to the prior calendar year. In any event, the actuary should explicitly state the time period to which the certification applies.
- 3.6 **Qualified or Limited Opinions**—If the actuary is aware that any rating methods or other practices are not in compliance with applicable regulatory requirements, such noncompliance should be reported in a qualified opinion. If the regulatory requirement requires a certification of actuarial soundness and the actuary does not believe the rates are actuarially sound, even though they are in compliance with the regulatory requirements, this should be noted in a qualified opinion. If the actuary is not able to certify some of the items required in the regulatory requirement, this should be noted in a limited opinion.

Section 4. Communications and Disclosures

4.1 Content of Certification—The content of the certification should include, as a minimum, the following:

- a. certification whether all practices, as required by regulatory requirement to be included in the certification, are in compliance;
- b. a listing of practices that are covered in the certification;
- c. identification of the time period covered by the certification;
- d. changes in rating methods and other practices that have occurred during the time period covered by the certification and that affect compliance;
- e. a description of any subsequent events;
- f. where a qualified certification is given, any actions that are being taken to bring the carrier into compliance; and
- g. where a limited certification is given, any sections of the regulatory requirements regarding certification that are not addressed.

4.2 Additional Required Disclosure—If the actuary is unable to certify actuarial soundness based on sections 2.1 and 3.3 of this standard, but certifies actuarial soundness based on regulatory requirements at variance with those sections, the actuary should so state in the certification. The actuary should also include the following, as applicable, in an actuarial communication:

- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In 1990, the National Association of Insurance Commissioners (NAIC) adopted a model act relating to small employer health insurance availability titled, *Premium Rates and Renewability Coverage for Health Insurance Sold to Small Employer Groups*. Since that time, two additional model acts have been adopted: *Small Employer Health Insurance Availability (Allocation with or without an Opt-out)*, and *Small Employer Health Insurance Availability (Prospective Reinsurance with or without an Opt-out)*; as well as a model regulation, *Model Regulation to Implement the Small Employer Health Insurance Model Act (Prospective Reinsurance with or without an Opt-out)*.

Recently, statutes and regulations enacted by a majority of states, often adopting some sections of the NAIC model regulations, have imposed statutory and regulatory constraints on carriers for small employer health benefit plans. These constraints may vary substantially from the NAIC model regulations, but generally have a similar intent. In particular, many of these statutes and regulations focus on narrowing the differences between premium rates charged to individual small employers with similar plan designs and case characteristics. The stated goals of these regulations often include the broad pooling of risks, the avoidance of extreme rate differences (which have occurred under certain tier and durational rating methods), and the expansion of access to health insurance coverage.

Current Practices

As noted above, applicable regulatory requirements vary considerably as to the extent of rating constraints imposed, as well as the specific language describing such constraints. In most situations, few, if any, restrictions exist as to the number and design of health benefit plans that can be offered in the marketplace. The current variety of state statutes and regulations renders it extremely difficult to provide precise rules for determining compliance. These conditions necessitate that the actuary apply a great deal of judgment in completing the certification of compliance.

Appendix 2

Comments on the Exposure Draft and Committee Responses

The first draft of this standard was exposed for review in October 1995, with a comment deadline of March 29, 1996. Thirty-five letters of comment were received. Additionally, the Health Committee of the ASB presented a workshop on the proposed standard at a Society of Actuaries meeting in June 1996 at Colorado Springs, which was attended by thirty-seven individuals (most responded positively to the proposed standard's text). Summarized below are the significant issues raised and questions contained in the comment letters, printed in lightface. The committee's responses to those issues appear in **boldface**.

Note also that, as mentioned in the transmittal memorandum to this standard of practice, the ASB adopted on May 1, 1996, a new format for all actuarial standards of practice. (See p. v for a detailed explanation of such changes.) Thus, the section numbers below refer to section numbers in the exposure draft, unless otherwise noted (some section numbers have remained the same).

General Observations

The nature of the comment letters reflected the divergence of opinion on the subject of the standard. Many respondents commented that they thought the standard represented a reasonable effort to assist the actuary in preparing the certification of compliance. Others thought that, given the "actuarially unsound" nature of the rating constraints prescribed by state law, it is impossible to produce a reasonable standard. Some respondents requested that the standard make clearer that it is simply a *guide* to compliance and does not represent a validation of the rating constraints. A few respondents suggested that the standard be expanded to go beyond certifications and include other aspects of rating and financial solvency. Others requested that the standard address issues unique to individual states. It was also suggested that the title be changed to more accurately reflect the nature of the standard.

Promulgation of this standard does not imply either approval or disapproval of the nature of prescribed laws in various states. The purpose of the standard is to provide the actuary with guidance regarding certifications of compliance with prescribed laws. In the event the actuary believes the rating constraints prescribed by law are "actuarially unsound," the standard allows the actuary to issue a qualified opinion regarding actuarial soundness (if necessary), while certifying compliance with other aspects of the law as necessary (see section 3.6). The scope of the standard has not been expanded to go beyond actuarial rating practices or other aspects of rating and financial solvency. Further, due to the variance in state laws, as well as the dynamic nature of these laws, it would not be appropriate nor realistic to address within the standard the compliance requirements for each state. The title of the standard was not changed. The ASB felt that the nature of the standard is adequately detailed in the purpose and scope sections (see sections 1.1 and 1.2).

Transmittal Memorandum Questions

In the transmittal memorandum to the exposure draft of this standard, the committee posed four questions to practitioners to keep in mind while reading the text. The questions are reprinted in full below:

1. Some regulations require an actuary to certify that market conduct activities, which are often non-actuarial in nature, are in compliance with the regulations. The proposed standard does not address these non-actuarial activities. Is this an appropriate approach?
2. Many regulations do not make specific provision for limited or qualified opinions. This standard provides that the actuary may issue such limited or qualified opinions. Is this approach satisfactory?
3. Sections 5.4 and 6.1 define minimum requirements for the documentation and content of certifications, respectively. Given the varying nature of statutes and regulations in effect, are the requirements in this proposed standard either too restrictive or not comprehensive enough?
4. Section 2.1 provides a definition of *actuarial soundness* for purposes of this standard. Is this definition satisfactory for the purposes of preparing a certification in those states requiring a certification of actuarial soundness?

Comments on the four issues listed above, and the committee responses to such, follow.

Transmittal Memorandum Issue #1: Non-Actuarial Matters—Several respondents commented on whether the standard should be expanded to address non-actuarial items. The responses ranged across the full spectrum of options. Some respondents thought it would be inappropriate for non-actuarial issues to be addressed in an actuarial standard of practice. Others thought it was a weakness for the standard not to give detailed guidance regarding all matters relative to which the actuary is certifying. One respondent pointed out that there is not necessarily a clear distinction between actuarial and non-actuarial topics, and he suggested that the standard should address all issues that could be interpreted to be actuarial in nature. Some respondents suggested that some general guidance would be helpful relative to non-actuarial matters, such as enlisting an officer of the company to certify those items that are beyond the scope of the actuary's expertise. **The committee continues to believe that it is not appropriate for this actuarial standard of practice to set standards for any non-actuarial activities related to actuarial certification of compliance with statutes or regulations (hereafter referred to as *regulatory requirements*) for small employer health benefit plans. Thus, the standard does not address any such non-actuarial activities.**

Transmittal Memorandum Issue #2: Limited or Qualified Opinion—With one exception, the respondents agreed that it *is* appropriate for the standard to authorize the issuance of a limited or qualified opinion. The contrary respondent stated that “the regulation need not mention a partial or qualified opinion for one to be given by an actuary with integrity.” Several of the respondents noted that the qualified or limited opinion should include clear statements as to the nature of the

qualification or limitation. One respondent asked for more details in the standard regarding the circumstances that would necessitate such an opinion and its contents. Another respondent noted that it would be the regulators' decision as to whether to accept that such an opinion satisfied a state's regulatory requirements. **The committee was pleased with the overwhelming support for the option of using a limited or qualified opinion, which is contained in section 3.6 of the standard. However, individual states will still need to determine—on an individual basis—how to respond to any qualified opinions that may be submitted.**

Transmittal Memorandum Issue #3: Minimum Requirements for Documentation and the Content of the Certification—For this issue, responses varied between those that thought the standard's requirements are reasonable and those that believed the requirements are excessive. The most common criticism was that the documentation and certification requirements should not extend beyond those explicitly mandated by law. One respondent was particularly concerned that the inclusion of “subsequent events” in the certification went beyond any regulatory requirement. Another thought that some guidance ought to be given where state law mandated different requirements than the standard. **It was the intention of the committee to set high standards for required documentation, as evidenced in the exposure draft. Given the nature of the certification of compliance required and the potential reliance placed upon such certification, the required documentation was established at a level the committee felt represented good actuarial practice. The committee felt that supporting documentation at this level would be to the actuary's advantage if the actuary were ever required to support the relevant certification. However, note that only documentation specifically required by a state need actually be submitted. The “subsequent events” test was another area where, because the committee believes it to be good actuarial practice, the committee deliberately set a standard that was higher than that specifically required by several states.**

Transmittal Memorandum Issue #4: Definition of *Actuarial Soundness*—Many respondents voiced the opinion that state laws pertaining to small employer health benefit plan ratemaking are inherently actuarially unsound. In light of this perception, many argued that not only should no definition of *actuarial soundness* be attempted, but that the existence of any standard of practice at all is, at best, giving undue credibility to unsound laws. Other respondents went even further and suggested that it is professionally unconscionable to promulgate any standard on this particular subject. Some felt that a standard could be produced without including a definition of *actuarial soundness*, but they argued that the standard should make clear that it was merely a tool for implementing statutorily mandated certifications. Others argued for producing a standard without a definition of *actuarial soundness* because states interpret this phrase in different ways, thereby making any single definition impossible. One respondent argued that no definition is needed because the drafters of the model legislation probably did not have a precise concept in mind when they inserted this phrase.

Many of the respondents suggested changing the definition. Some wanted to include a clearer statement that this definition only applies to the small group certification, and that other situations would call for differing definitions. Several respondents asked for clarification as to whether the definition is prospective or retrospective in nature. Many questioned limiting the time period to that “covered by the certification,” arguing that actuarial soundness is more long-term in nature. Several respondents questioned the aggregate nature of the definition, and

suggested that *actuarial soundness* necessitates that each rate is determined using appropriate methods. Some respondents asked that the definition allow for expenses to be determined on a marginal basis and that subsidies be permitted between the small group and other lines of business. One commentator suggested that the definition be made more general so as to allow the carrier to better respond to competitive forces.

Another respondent suggested that the restriction to a single state is too narrow, and also requested some recognition of initial losses incurred by start-up companies. One writer suggested that the phrase “based on information that was reasonably available at the point in time when the premium rates were established” be added. Another asked for clarification as to how this definition relates to the standards on risk classification and rate filings [see Actuarial Standard of Practice (ASOP) Nos. 8 and 12]. Some respondents asked that *investment income* be added to the definition, and one asked that the phrase *cost of capital* be clarified.

The committee carefully considered all of the responses received regarding the definition of *actuarial soundness*, but basically reaffirmed the scope of the definition used in the exposure draft. In developing the definition, the committee grappled with two main issues: (1) the definition needed to work within the context of the certification of compliance being prepared, and (2) the definition had to be one such that an actuary addressing a small group line of business could reasonably certify to. The committee feels the definition in this standard meets these two defining characteristics.

With regard to the comment that no definition of *actuarial soundness* should be attempted, the committee believes that, since the standard relates to actuarial issues, and since many of the applicable laws, including the NAIC model laws, require the actuary to address *actuarial soundness*, it is appropriate to address the issue within this standard. Further, the committee believes it has created a better standard of practice by doing so.

Although the committee did not alter its position on the scope of the definition or the necessity of including such a definition within the standard, the committee did make the following changes to the definition of *actuarial soundness*, based on the comments received: (1) combined the original retrospective and prospective definitions into a single definition; (2) inserted the phrase “including expected reinsurance cash flows, governmental risk adjustment cash flows, and investment income, . . .”; (3) inserted the word *expected* before *costs*; (4) changed *health benefit expenses* to *health benefits*; (5) changed *operational* to *marketing*; and (6) inserted a second paragraph, as follows: “For either a retrospective or a prospective certification, the determination of actuarial soundness is based on information available at the time the premium rates were developed.”

The committee notes that the definition of *actuarial soundness* used is an aggregate definition. It is based on the premise that actuarial soundness is an aggregate rate adequacy test. Some commentators suggested a more specific definition be used, based on the rates having appropriate actuarial balance or equivalence between benefit plans or demographic risk characteristics. This approach was considered by the committee, but ultimately rejected.

Issues relating to how to address expense allocations were viewed as too narrow to be considered here. These are valid issues for the pricing actuary to consider in practice.

As noted in section 2, the definitions included in the standard are defined for use *in this standard of practice*. Although it might be helpful to develop definitions that would have more widespread acceptance, the nature of the certification seems to preclude the development of such definitions. However, the committee did add one definition, that of *cost of capital*.

With regard to the request for clarification as to how this definition relates to the standards of practice on risk classification and rate filings, the committee believes that this standard does not conflict with these other ASOPs.

Section 1. Purpose, Scope, and Effective Date

Section 1.1, Purpose—Two comments were received on this section. One suggested that the purpose of the standard be broadened to address more elements of small group reform that may impact the certification. The other suggested that the phrase “actuarial practices applicable to carriers for small employer health benefit plans” was too broad, in that there are actuarial practices, such as setting reserves, that are beyond the scope of the standard. **The committee believes that the language in the Purpose section is appropriate. It is the purpose of this standard of practice to address actuarial items relative to which the states require a certification of compliance. It is not appropriate for the standard to go beyond that.**

Section 1.2, Scope—One respondent proposed that the standard be expanded to include issues pertaining to financial solvency. (Comments regarding certification of market conduct compliance are discussed above under Transmittal Memorandum Issue #1.) **As stated in the committee response to section 1.1 (see above), the committee believes it is not appropriate to extend the scope beyond the required *actuarial* aspects of the certification.**

Section 1.3, Effective Date—Comments were received asking for clarification as to the meaning of the January 1, 1997 date. **The committee changed the wording in an effort to clarify its intent.**

Section 2. Definitions

Section 2.1, Actuarial Soundness—See the comments above (again, the committee's response is in **bold**) under Transmittal Memorandum Issue #4.

Section 2.2, Carrier—One respondent suggested changing “*Carrier* includes an insurance company, . . .” to “*Carrier* includes, but is not limited to, an insurance company . . .”. It was also suggested that the standard clarify that it is the definition of *carrier* in the state regulation that is the controlling factor. **The committee believes the existing language is suitable and is sufficiently broad to include any entity regulated by the states.**

Section 2.3, Health Benefit Plan—Comments included substituting *medical* for *health* and changing the words to read “provided by a small employer carrier.” **The committee believes that the existing language is consistent with common usage in regulatory requirements.**

Section 2.4, Small Employer—One respondent suggested that the actuary certify that the small employers that are insured meet the statutory definition. Others suggested that the definition be modified to clarify that statutory constraints may exist as to who is considered an eligible employee, over what time period the number of eligible employees is determined, and the handling of small employers whose employees are in more than one state. Another suggested that an example of a specific upper bound be provided, such as 50, in order to list specifically what size group would typically be subject to this standard. Another respondent suggested that the phrase *For purposes of this standard* be added at the beginning of the definition, and another suggested that the definition be changed to eliminate the reference to *association*. **Based on the comments received, the committee made the following changes: (1) the word *association* was changed to *organization*; (2) the word *eligible* was inserted before *employees*; and (3) the phrase *and that satisfies any other statutorily defined criteria* was added. In addition, all standards of practice now contain the following introductory sentence, which applies to all definitions listed in section 2: “The definitions below are defined for use in this actuarial standard of practice.”**

Section 2.5, Subsequent Events—One commentator suggested dropping the phrase *or future*. **The committee considered this suggestion, but decided not to make this change.**

Section 3. Background and Historical Issues (now in Appendix 1 under Background)

Suggestions included removing the last sentence, adding the phrase *and case characteristics* in the next to last sentence of the second paragraph, and removing the first paragraph entirely on the grounds that these points are more appropriately included in the Scope and Purpose sections. **The committee added the phrase *and case characteristics* to more accurately reflect the intent of the regulatory requirements. The committee also decided to leave the first paragraph in this section, because it believes that this material *does* address the historical background pertaining to the subject of the standard.**

Section 4. Current Practices and Alternatives (now in Appendix 1 under Current Practices)

The only comment on this section was a suggestion to revise the last paragraph to read, “While the current variety of state statutes and regulations and the variety of reasonable interpretations of these statutes and regulations render it extremely difficult to provide precise rules for determining compliance, . . .”. **The committee revised the wording in the paragraph to improve readability.**

Section 5. Analysis of Issues and Recommended Compliance (Now Section 3)

Section 5.1, Introduction (now section 3.1)—One respondent suggested adding as a separate item the interpretive material distributed by the state insurance department to the list of items for review. Another suggested deleting the last clause of the last sentence. **The committee added the following sentence:**

The actuary should also consider any other mandatory requirements set forth in any applicable, generally distributed interpretive materials issued by regulators in support of the applicable regulatory requirements, and should satisfy those requirements when preparing the certification.

Section 5.2, Testing of Rates for Compliance with Rating Constraints (now section 3.2)—One respondent suggested adding the following text: “Testing of rates in a community rating system may consist of an examination of the methods and factors used, and audits of their implementation.” Another suggested adding the sentence, “All known violations of the rating constraints that result in a rate materially higher than permitted by the statute or regulation must be addressed in a qualified opinion.” This respondent suggested that *material* be defined as no greater than 5%. Another thought the words *reasonably*, *materially*, and *appropriate* were too general to be consistently interpreted. **As for the first comment, the committee believes that the suggested language represents a specific example, whereas the standard (appropriately) addresses only the general case. It would be very difficult indeed to create a standard that could address all specific concerns, and, thus, the change was not made. As for the second comment, the committee did not provide definitions for the words material, reasonable, or appropriate, since these words are used frequently in actuarial literature. The definitions of such words are dependent on the context of their use.**

Section 5.3, Testing of Rates for Actuarial Soundness (now section 3.3 and titled Analysis of Rates for Actuarial Soundness)—A couple of respondents suggested substituting *testing* for *analysis* in the first sentence. Several respondents also questioned whether the description of the *retrospective* certification makes sufficiently clear that it is not a test of actual results. One respondent suggested that adding the word *expected* before the word *costs* in the definition of *actuarial soundness* might make this point clearer. Two of the respondents suggested that a retrospective certification is theoretically inappropriate, in that such a certification ignores the most relevant information available. One respondent suggested that only the first sentence be retained, or that the remaining sentences be modified to be more general in nature. Another asked for clarification as to how a certification that is both retrospective and prospective should be handled, and another suggested that the language more specifically point out that “each rate certified is clearly subject to certification only once.” Another questioned the value of prospective certifications, given that rate schedules change so frequently. **In response to the first comment listed above, the committee did change the word testing to analysis (the title to the section was also changed accordingly). The definition of actuarial soundness was also revised so that the description of a retrospective certification is more clear. As for the remainder of the comments regarding this section, they apply to the appropriateness of state legislation, and, as such, the topic of these comments is outside the scope of the ASOP.**

Section 5.4, Documentation of Compliance (now section 3.4)—One respondent pointed out that there was no mention of a requirement within the standard relating to the documentation of the data used and commentary on the quality of the data. Another wanted the phrase *if applicable* added to the end of the first sentence. Another suggested that if the actuary receives information from a source outside the actuary’s firm, the actuary should obtain signed correspondence from the source verifying the accuracy and completeness of the information. **As for the first comment, a standard already exists on data quality (see ASOP No. 23), so the committee did not believe that any additional language on this subject was necessary within this standard. As for the second comment, the phrase *if applicable* was added at the end of the first sentence. The suggestion regarding obtaining signed correspondence may be a good idea in practice, and the committee notes that such a practice can be used. However, this practice is not required by the standard.**

Section 5.4.1, Rating Methods and Renewal Underwriting Practices (now section 3.4.1 and titled Rating Methods and Underwriting Practices)—One respondent suggested changing the title to Rating Methods and New Business and Renewal Underwriting Practices. Others suggested deleting sections (b), (c), and (g) on the grounds of being overly burdensome on small companies. Another thought that all of the sections should be eliminated. If the sections were not eliminated, this respondent suggested combining sections (a), (d), and (e); combining sections (b) and (g); and eliminating section (c). Another suggested that the list of items should be expanded to include the basis of the data on which claims were estimated, corporate practices regarding expense and investment income allocation, pooling/reinsurance mechanisms, and any subsidizing of the small group line by other lines. A couple of respondents also suggested removing the parentheses from the parenthetical phrase in section (a). **In response to the above comments, the committee changed the title of this section by removing the word *renewal*. The committee also added a new section (b) in response to comments received on investment income, pooling/reinsurance, and other items. Further, the committee removed the parentheses in section (a), as was suggested.**

Section 5.4.2, Fees and Charges (now section 3.4.1(i))—One respondent welcomed the reference to fees or charges that may or may not be remitted to the carrier. Another respondent asked for clarification relative to the treatment of association dues. **This section was moved to section 3.4.1, Rating Methods and Underwriting Practices, as being one of several items that are usually reviewed in order to certify compliance with requirements for rating methods and new business and renewal underwriting practices. As for the latter comment, the answer is dependent on regulatory interpretation, and, thus, the material is too specific for this ASOP.**

Section 5.4.3, Demonstration of Compliance with Rating Constraints (now section 3.4.2)—One respondent asked for clarification as to whether the standard requires that the documentation supporting the certification be submitted to regulators. **The committee believes that regulators define what documentation they should receive, not the ASOP. Thus, no change was made to the text.**

Section 5.4.4, Demonstration of Compliance with Actuarial Soundness (now section 3.4.3)—One respondent asked for clarification as to whether the required documentation was similar to

the actuarial memorandum regulation required for the statutory annual statement. This respondent also asked for clarification regarding the extent to which this information would be considered confidential. One respondent suggested that methods be included as well as assumptions. Another respondent commented that while this section reflected “common sense,” it was good to explicitly include it. Two others suggested that this section be eliminated. **All of the items described within this section of the standard (i.e., everything in sections 3.4.1–3.4.3) are to be available in the file, but not submitted to the regulator unless requested, as noted in the introductory paragraph of section 3.4.**

Section 5.5, Time Period Covered by Certification (now section 3.5)—One respondent suggested deleting the second sentence. Another suggested that compliance should only be certified prospectively. **The committee did not make any changes to the second sentence, since it believes that this text provides some flexibility and room for actuarial judgment. The other comment reflects upon the appropriateness of the regulation, which, again, is outside the scope of the ASOP.**

Section 5.6, Qualified or Limited Opinions (now section 3.6)—One respondent suggested deleting the second sentence. Another asked for more explanation regarding what circumstances would warrant a qualified or limited opinion. **The committee believes that the section contains sufficient information regarding the circumstances that necessitate a qualified or limited opinion.**

Section 6. Communications and Disclosures (Now Section 4)

Section 6.1, Content of Certification (now section 4.1)—One respondent stated that the certification should explicitly include the statement that the plan is actuarially sound for the period involved, and that the certification should explicitly include the definition of *actuarial soundness* that is being utilized. Another asked for clarification of section 6.1(d), and pointed out that many of the other sections within section 6.1 seem overlapping and redundant. Another asked that information regarding the name of the actuary and corporate affiliation be required, and that a description of the data used should be included.

Regarding the first point raised, the committee reaffirmed its decision that a certification need only address *actuarial soundness* if required by regulatory requirement. To do otherwise would significantly expand the scope of such a required certification in states where such a certification is not required. In practice, the actuary can always include a certification of actuarial soundness even when not required. If the actuary is using a definition of *actuarial soundness* that differs from that contained in the standard of practice, it must be so noted, either as indicated in the new section 4.2 or in a qualified opinion, as appropriate. (If the actuary is using the standard's definition of *actuarial soundness*, it is not necessary to include such in the certification.) As for the comment that the sections listed in section 6.1 seem overlapping and redundant, the committee believes that section 6.1 (now section 4.1) does not contain overlapping material. The committee decided to leave the items listed in this section unchanged.

The committee thanks everyone who took the time and made the effort to write comment letters. The input was helpful in developing the final standard.



**Actuarial Standard
of Practice
No. 27**

Revised Edition

**Selection of Economic Assumptions for
Measuring Pension Obligations**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2020**

Doc. No. 197

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June 2020

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection of Economic Assumptions for Measuring Pension Obligations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 27

This document contains a revision of ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*.

History of the Standard

The ASB provides guidance for measuring pension and retiree group benefit obligations through the series of ASOPs listed below.

1. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*;
2. ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*;
3. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
4. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;
5. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*; and
6. ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

The last revision of ASOP No. 27 was issued in September 2013.

In response to specific requests for changes in the ASOPs and other activity related to public pension plans, in July 2014 the ASB issued a Request for Comments on the topic of ASOPs and Public Pension Plan Funding and Accounting. Over 50 comment letters were received covering a wide variety of potential ASB actions. In December 2014, the ASB formed the Pension Task Force and charged it with reviewing these comments and other relevant reports and input to develop recommendations for ASB next steps. In July 2015, the ASB held a public hearing on actuarial standards of practice applicable to actuarial work regarding public plans. The Pension Task Force provided its report to the ASB in February 2016. The report included suggestions for changes to the ASOPs that would apply to all areas of pension practice. In June 2016, the ASB directed its Pension Committee to draft appropriate modifications to the actuarial standards of

practice, in accordance with ASB procedures, to implement the suggestions of the Pension Task Force. Draft revisions of ASOP Nos. 4, 27, and 35 were exposed for comment in March 2018 with a comment deadline of July 31, 2018.

First Exposure Draft

The first exposure draft was issued in March 2018 with a comment deadline of July 31, 2018. Eighteen comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was issued in June 2019 with a comment deadline of September 15, 2019. Eight comment letters were received and considered in making changes that are reflected in this revised ASOP.

Notable Changes from the Second Exposure Draft

Notable changes made to the second exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency within this ASOP and ASOP No. 35.

1. Section 3.8.3(j), Forward-Looking Expected Investment Returns, was modified to delete the educational material on forward-looking expected geometric and arithmetic returns.
2. Section 3.16, Documentation, was revised to remove the requirement that when preparing documentation the actuary should prepare documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary.

In addition, a number of changes were made to improve readability, clarity, or consistency within this ASOP and with ASOP No. 35. Please see appendix 2 for a detailed discussion of the comments received and the reviewers' responses.

Summary of Notable Changes from the Existing ASOP No. 27 Adopted September 2013

Notable changes from the existing ASOP No. 27 adopted September 2013 are summarized below.

1. Section 1.2, Scope, was expanded to clarify the application of the standard when an economic assumption is not selected by the actuary and whenever the actuary has an obligation to assess the reasonableness of an economic assumption that the actuary has not selected.
2. Section 3.5.6, Views of Experts (now Other Sources of Economic Data and Analyses), was renamed and clarified to provide for use of other sources of economic data and analyses.

3. Section 3.6, Select a Reasonable Assumption, was clarified to acknowledge that relevant historical data may not exist.
4. Section 3.6.3, Combined Effect of Assumptions, was added to provide guidance regarding the combined effect of assumptions.
5. Section 3.8.3(j), Forward-Looking Expected Investment Returns, was modified to delete the educational material on forward-looking expected geometric and arithmetic returns.
6. Section 3.13, Reviewing Assumptions Previously Selected by the Actuary, was added to provide additional guidance regarding the reviewing of assumptions that the actuary previously selected.
7. Section 3.14, Assessing Assumptions Not Selected by the Actuary, replaced previous section 3.13, Prescribed Assumption(s), and was expanded to provide additional guidance regarding assessing assumptions not selected by the actuary.
8. Section 3.15, Phase-In of Changes in Assumptions, was added to provide guidance regarding the phase-in of changes in assumptions.
9. Section 3.16, Documentation, was added to provide guidance regarding documentation.
10. Section 4.1.2, Rationale for Assumptions, was modified concerning the disclosure of the rationale for assumptions and was clarified concerning the application to planned assumption changes after the measurement date.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The ASB also thanks its former Pension Committee members and, in particular, former Pension Committee Chairperson Christopher F. Noble for their contributions in the drafting of this standard.

The ASB voted in June 2020 to adopt this standard.

Pension Committee of the ASB

David T. Kausch, Chairperson

Benjamin Ablin	Howard A. Freidin
Sarah E. Dam	Stephen T. McElhaney
Stacey A. Day	Keith L. Nichols
Mark T. Dungan	Matthew M. Smith
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Actuarial Standards Board

Kathleen A. Riley, Chairperson

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Kevin M. Dyke	Barbara L. Snyder
Darrell D. Knapp	Patrick B. Woods

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 27

**SELECTION OF ECONOMIC ASSUMPTIONS
FOR MEASURING PENSION OBLIGATIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) does the following:
- a. provides guidance to actuaries when performing actuarial services that include selecting (including giving advice on selecting) economic assumptions—primarily investment return, discount rate, post-retirement benefit increases, **inflation**, and compensation increases—for measuring obligations under defined benefit pension plans;
 - b. supplements the guidance in ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, that relates to the selection and use of economic assumptions;
 - c. supplements the guidance in ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*, that relates to the selection and use of economic assumptions; and
 - d. supplements the guidance in ASOP No. 34, *Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions*, that relates to the selection and use of economic assumptions.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services that include selecting economic assumptions to measure obligations under any defined benefit pension plan that is not a social insurance program, as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless ASOPs on social insurance explicitly call for application of this standard). Measurements of defined benefit pension plan obligations include calculations such as funding valuations or other assignment of plan costs to time periods, liability measurements or other actuarial present value calculations, and cash flow projections or other estimates of the magnitude of future plan obligations. Measurements of pension obligations do not generally include individual benefit calculations, individual benefit statement estimates, or nondiscrimination testing.

Throughout this standard, any reference to selecting economic assumptions also includes giving advice on selecting economic assumptions. For example, the actuary may provide advice on selecting economic assumptions under US GAAP or Governmental Accounting Standards even though another party is ultimately responsible for selecting these assumptions. This standard applies to the actuarial advice given in such situations, within the constraints imposed by the relevant accounting standards.

As discussed in ASOP No. 41, *Actuarial Communications*, an assumption may be selected by the actuary or selected by another party. Nothing in this standard is intended to require the actuary to select an economic assumption that has otherwise been selected by another party. When an economic assumption is not selected by the actuary, the guidance in section 3.14 and section 4 concerning assessment and disclosure applies.

If the actuary determines that the guidance in this standard conflicts with ASOP Nos. 4 or 6, ASOP Nos. 4 or 6 will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any actuarial report that meets the following criteria: (a) the actuarial report is issued on or after August 1, 2021; and (b) the **measurement date** in the actuarial report is on or after August 1, 2021.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Inflation**—General economic **inflation**, defined as price changes over the whole of the economy.
- 2.2 **Measurement Date**—The date as of which the values of the pension obligations and, if applicable, assets are determined.
- 2.3 **Measurement Period**—The period subsequent to the **measurement date** during which a particular economic assumption will apply in a given measurement.

- 2.4 **Merit Adjustments**—The rates of change in an individual’s compensation attributable to personal performance, promotion, seniority, or other individual factors.
- 2.5 **Prescribed Assumption or Method Set by Another Party**—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards give the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is a **prescribed assumption or method set by another party**.
- 2.6 **Prescribed Assumption or Method Set by Law**—A specific assumption or method that is mandated or that is selected from a specified range or set of assumptions or methods that is deemed to be acceptable by applicable law (statutes, regulations, and other legally binding authority). For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is not a **prescribed assumption or method set by law**.
- 2.7 **Productivity Growth**—The rates of change in a group’s compensation attributable to the change in the real value of goods or services per unit of work.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—Pension obligation values incorporate assumptions about pension payment commencement, duration, and amount. Pension obligation values also require discount rates to convert future expected payments into present values. Some of these assumptions are economic assumptions covered under this ASOP, and some are noneconomic assumptions covered under ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. In order to measure a pension obligation, the actuary will typically need to select or assess assumptions underlying the obligation.
- 3.2 **Identification of Types of Economic Assumptions Used in the Measurement**—The actuary should identify the types of economic assumptions to use for a specific measurement. In doing so, the actuary should take into account the following:
- a. the purpose of the measurement;
 - b. the characteristics of the obligation to be measured (such as **measurement period**, pattern of plan payments over time, open or closed group, materiality, and volatility); and
 - c. materiality of the assumption to the measurement (see section 3.5.2).

The types of economic assumptions used to measure pension obligations may include **inflation**, investment return, discount rate, compensation increases, and other economic factors such as Social Security, cost-of-living adjustments, rate of payroll growth, growth of individual account balances, and variable conversion factors.

3.3 **General Selection Process**—After identifying the types of economic assumptions to be used for the measurement, the actuary should follow the general process set forth below for selecting each economic assumption for a specific measurement:

- a. identify components, if any, of the assumption;
- b. evaluate relevant data (section 3.4);
- c. take into account factors specific to the measurement;
- d. take into account other general considerations, when applicable (section 3.5); and
- e. select a reasonable assumption (section 3.6).

After completing these steps for each economic assumption, the actuary should review the set of economic assumptions for consistency (section 3.12) and make appropriate adjustments if necessary.

3.4 **Relevant Data**—To evaluate relevant data, the actuary should review appropriate recent and long-term historical economic data. The actuary should not give undue weight to recent experience. The actuary should take into account the possibility that some historical economic data may not be appropriate for use in developing assumptions for future periods due to changes in the underlying environment.

3.5 **General Considerations**—The actuary should take into account the following when applicable:

3.5.1 **Adverse Deviation or Plan Provisions That Are Difficult to Measure**—Depending on the purpose of the measurement, the actuary may determine that it is appropriate to adjust the economic assumptions to provide for adverse deviation or reflect plan provisions that are difficult to measure. The actuary should disclose any explicit adjustment made in accordance with section 4.1.1.

3.5.2 **Materiality**—The actuary should take into account the balance between refined economic assumptions and materiality. The actuary is not required to use a particular type of economic assumption or to select a more refined economic assumption when in the actuary's professional judgment such use or selection is not expected to produce materially different results.

3.5.3 **Cost of Using Refined Assumptions**—The actuary should take into account the balance between refined economic assumptions and the cost of using refined

assumptions. For example, actuaries working with small plans may prefer to emphasize the results of general research to comply with this standard.

3.5.4 **Rounding**—Taking into account the purpose of the measurement, materiality, and the cost of using refined assumptions, the actuary may determine that it is appropriate to apply a rounding technique to the selected economic assumption. In such cases, the rounding technique should be unbiased.

3.5.5 **Changes in Circumstances**—The actuary should select economic assumptions that reflect the actuary’s knowledge as of the **measurement date**. If the actuary learns of an event occurring after the **measurement date** that would have changed the actuary’s selection of an economic assumption, the actuary may reflect this change as of the **measurement date**. For example, a collective bargaining agreement ratified after the **measurement date** may lead the actuary to change the compensation increase assumption that otherwise would have been selected.

3.5.6 **Other Sources of Economic Data and Analyses**—When the actuary is responsible for selecting or giving advice on selecting economic assumptions, the actuary may incorporate economic data and analyses from a variety of other sources, including representatives of the plan sponsor and administrator, investment advisors, economists, and other professionals. However, the selection or advice should reflect the actuary’s professional judgment.

3.6 **Selecting a Reasonable Assumption**—The actuary should select reasonable economic assumptions. For this purpose, an assumption is reasonable if it has the following characteristics:

- a. it is appropriate for the purpose of the measurement;
- b. it reflects the actuary’s professional judgment;
- c. it takes into account current and historical data that is relevant to selecting the assumption for the **measurement date**, to the extent such relevant data is reasonably available;
- d. it reflects the actuary’s estimate of future experience, the actuary’s observation of the estimates inherent in market data (if any), or a combination thereof; and
- e. it is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation or plan provisions that are difficult to measure are included (as discussed in section 3.5.1) or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

3.6.1 **Reasonable Assumption Based on Future Experience or Market Data**—The actuary should develop a reasonable economic assumption based on the actuary’s estimate

of future experience, the actuary’s observation of the estimates inherent in market data, or a combination thereof. Examples of how the actuary may observe estimates inherent in market data include the following:

- a. comparing yields on **inflation**-indexed bonds to yields on equivalent non-**inflation**-indexed bonds as a part of estimating the market’s expectation of future **inflation**;
- b. comparing yields on bonds of different credit quality to determine market credit spreads;
- c. observing yields on U.S. Treasury debt of various maturities to determine a yield curve free of credit risk; and
- d. examining annuity prices to estimate the market price to settle pension obligations.

The items listed above, as well as other market observations or prices, include estimates of future experience as well as other considerations. For example, the difference in yields between **inflation**-linked and non-**inflation**-linked bonds may include premiums for liquidity and future **inflation** risk in addition to an estimate of future **inflation**. The actuary may want to adjust estimates based on observations to reflect the various risk premiums and other factors (such as supply and demand for tradable bond or debt securities) that might be reflected in market pricing.

3.6.2 **Range of Reasonable Assumptions**—Due to the uncertain nature of the items for which assumptions are selected, the actuary may consider several different assumptions reasonable for a given measurement. Different actuaries will apply different professional judgment and may choose different reasonable assumptions. As a result, a range of reasonable assumptions may develop, both for an individual actuary and across actuarial practice.

3.6.3 **Combined Effect of Assumptions**—The actuary should select assumptions (both demographic assumptions selected in accordance with ASOP No. 35 and economic assumptions selected in accordance with this standard) such that the combined effect of the assumptions selected by the actuary is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic) except when provisions for adverse deviation are included or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51.

For example, the actuary may have decided not to make any assumption with regard to four different types of future events, each of which alone is immaterial. However, the effect of omitting assumptions for all four types of future events may be a material understatement or overstatement of the measurement results. In these circumstances, the assumptions should be revised.

3.7 **Selecting an Inflation Assumption**—If the actuary is using an approach that treats **inflation** as an explicit component of other economic assumptions or as an independent assumption, the actuary should follow the general process set forth in section 3.3 to select an **inflation** assumption.

3.7.1 **Data**—The actuary should evaluate appropriate **inflation** data. These data may include consumer price indices, the implicit price deflator, forecasts of **inflation**, yields on government securities of various maturities, and yields on nominal and **inflation**-indexed debt.

3.7.2 **Select and Ultimate Inflation Rates**—The actuary may assume select and ultimate **inflation** rates in lieu of a single **inflation** rate. Select and ultimate **inflation** rates vary by period from the **measurement date** (for example, **inflation** of x% for the first 5 years following the **measurement date** and y% thereafter).

3.8 **Selecting an Investment Return Assumption**—The investment return assumption reflects the anticipated returns on the plan's current and, if appropriate for the measurement, future assets. This assumption is typically constructed by considering various factors including, but not limited to, the time value of money; **inflation** and **inflation** risk; illiquidity; credit risk; macroeconomic conditions; and growth in earnings, dividends, and rents.

In developing a reasonable assumption for these factors and in combining the factors to develop the investment return assumption, the actuary may take into account a broad range of data and other inputs, including the judgment of investment professionals.

3.8.1 **Data**—The actuary should evaluate appropriate investment data. These data may include the following:

- a. current yields to maturity of fixed income securities such as government securities and corporate bonds;
- b. forecasts of **inflation**, GDP growth, and total returns for each asset class; and
- c. historical and current investment data including, but not limited to, real and nominal returns, the **inflation** and **inflation** risk components implicit in the yield of **inflation**-protected securities, dividend yields, earnings yields, and real estate capitalization rates.

The actuary may also take into account historical and current statistical data showing standard deviations, correlations, and other statistical measures related to historical or future expected returns of each asset class and to **inflation**. The actuary may use stochastic simulation models or other analyses to develop expected investment returns from this statistical data.

- 3.8.2 **Components of the Investment Return Assumption**—When the actuary is developing an investment return assumption by combining two or more components or factors, the actuary should ensure that the combination of these components or factors is logically consistent.
- 3.8.3 **Measurement-Specific Considerations**—The actuary should take into account factors specific to each measurement in selecting an investment return assumption. Such factors may include the following:
- a. **Investment Policy**—The plan’s investment policy may include the following: (i) the current allocation of the plan’s assets; (ii) types of securities eligible to be held (diversification, marketability, social investing philosophy, etc.); (iii) a stationary or dynamic target allocation of plan assets among different classes of securities; and (iv) permissible ranges for each asset class within which the investment manager is authorized to make investment decisions. If the actuary takes into account the investment policy in selecting an investment return assumption, the actuary should consider reflecting whether the current investment policy is expected to change during the **measurement period**.
 - b. **Effect of Reinvestment**—Two reinvestment risks are associated with traditional, fixed income securities: (i) reinvestment of interest and normal maturity values not immediately required to pay plan benefits, and (ii) reinvestment of the entire proceeds of a security that has been called by the issuer.
 - c. **Investment Volatility**—Plans investing heavily in those asset classes characterized by high variability of returns may be required to liquidate those assets at depressed values to meet benefit obligations. Other investment risks may also be present, such as default risk or the risk of bankruptcy of the issuer.
 - d. **Investment Manager Performance**—Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). The actuary should not assume that superior or inferior returns will be achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy unless the actuary believes, based on relevant supporting data, that such superior or inferior returns represent a reasonable expectation over the **measurement period**.
 - e. **Expenses Paid from Plan Assets**—Investment and other administrative expenses may be paid from plan assets. To the extent such expenses are not otherwise recognized, the actuary should reduce the investment return assumption to reflect these expenses.

- f. Cash Flow Timing—The timing of expected contributions and benefit payments may affect the plan’s liquidity needs and investment opportunities.
 - g. Benefit Volatility—Benefit volatility may be a primary factor for small plans with unpredictable benefit payment patterns. It may also be an important factor for a plan of any size that provides highly subsidized early retirement benefits, lump-sum benefits, or supplemental benefits triggered by corporate restructuring or financial distress. In such plans, the untimely liquidation of securities at depressed values may be required to meet benefit obligations.
 - h. Expected Plan Termination—In some situations, the actuary may expect the plan to be terminated at a determinable date. For example, the actuary may expect a plan to terminate when the owner retires, or a frozen plan to terminate when assets are sufficient to provide all accumulated plan benefits. In these situations, the actuary may select an investment return assumption that reflects a shortened **measurement period** that ends at the expected termination date.
 - i. Tax Status of the Funding Vehicle—If the plan’s assets are not kept in a tax-exempt fund, income taxes may reduce the plan’s investment return. Taxes may be reflected by an explicit reduction in the total investment return assumption or by a separately identified assumption.
 - j. Forward-Looking Expected Investment Returns—In some instances, the actuary will collect or develop forward-looking expected investment returns by asset class or for the entire portfolio. The actuary should take appropriate steps to determine the time horizon, the price **inflation**, and the expenses reflected in the expected returns. In addition, the actuary should take steps to determine the type of forward-looking expected returns (i.e., forward-looking expected geometric returns or forward-looking expected arithmetic returns) and that they are used appropriately.
- 3.8.4 **Multiple Investment Return Rates**—The actuary may assume multiple investment return rates in lieu of a single investment return rate. Multiple investment return rates may include the following:
- a. Select and Ultimate Investment Return Rates—Assumed investment return rates vary by period from the **measurement date** (for example, returns of x% for the first 10 years following the **measurement date** and y% thereafter). When assuming select and ultimate investment return rates, the actuary should consider reflecting the relationships among **inflation**, interest rates, and market appreciation or depreciation.

- b. Benefit Payments Covered by Designated Current or Projected Assets—The actuary may assume one investment return rate for benefit payments covered by designated current or projected plan assets on the **measurement date** and a different investment return rate for the balance of the benefit payments and assets.
- 3.9 **Selecting a Discount Rate**—A discount rate is used to calculate the present value of expected future plan payments. A discount rate may be a single rate or a series of rates, such as a yield curve. The actuary should take into account the purpose of the measurement as a primary factor in selecting a discount rate. Measurement purposes may include the following:
- a. Contribution Budgeting—An actuary evaluating the sufficiency of a plan's contribution policy may choose among several discount rates. The actuary may use a discount rate that reflects the anticipated investment return from the pension fund. Alternatively, the actuary may use a discount rate appropriate for defeasance, settlement, or market-consistent measurements.
 - b. Defeasance or Settlement—An actuary measuring a plan's present value of benefits on a defeasance or settlement basis may use a discount rate implicit in annuity prices or other defeasance or settlement options.
 - c. Market-Consistent Measurements—An actuary making a market-consistent measurement may use a discount rate implicit in the price at which benefits that are expected to be paid in the future would trade in an open market between a knowledgeable seller and a knowledgeable buyer. In some instances, that discount rate may be approximated by market yields for a hypothetical bond portfolio whose cash flows reasonably match the pattern of benefits expected to be paid in the future. The type and quality of bonds in the hypothetical portfolio may depend on the particular type of market-consistent measurement.
- The present value of expected future pension payments may be calculated from the perspective of different parties, recognizing that different parties may have different measurement purposes. For example, the present value of expected future payments could be calculated from the perspective of an outside creditor or the entity responsible for funding the plan. The outside creditor may desire a discount rate consistent with other measurements of importance to the creditor even though those other measurements may have little or no importance to the entity funding the plan.
- 3.10 **Selecting a Compensation Increase Assumption**—Compensation is a factor in determining participants' benefits in many pension plans. Also, some actuarial cost methods take into account the present value of future compensation. Generally, a participant's compensation will increase over the long term in accordance with **inflation, productivity growth, and merit adjustments**. The assumption used to measure the anticipated year-to-year change in compensation is referred to as the compensation increase assumption. It may be a single rate, it may vary by age or service, or it may vary over future years. In certain

circumstances, such as a temporary reduction or freeze in compensation, the compensation increase assumption may be negative or zero.

When selecting a compensation increase assumption, the actuary should take into account the following:

3.10.1 **Data**—The actuary should evaluate available compensation data. Compensation data may include the following:

- a. the plan sponsor's current compensation practice and any anticipated changes in this practice;
- b. current compensation distributions by age or service;
- c. historical compensation increases and practices of the plan sponsor and other plan sponsors in the same industry or geographic area; and
- d. historical national wage increases and **productivity growth**.

When reviewing available plan-sponsor-specific compensation data, the actuary should take into account the credibility of these data. For small plans or recently formed plan sponsors, industry or national data may provide a more appropriate basis for developing the compensation increase assumption. The actuary should refer to ASOP No. 25, *Credibility Procedures*, for additional guidance.

3.10.2 **Measurement-Specific Considerations**—The actuary should take into account factors specific to each measurement in selecting a specific compensation increase assumption. Such factors may include the following:

- a. Compensation Practice—The plan sponsor's current compensation practice and any contemplated changes may affect the compensation increase assumption, at least in the short term. For example, if pension benefits are a function of base compensation and the plan sponsor is changing its compensation practice to put greater emphasis on incentive compensation, future growth in base compensation may differ from historical patterns.
- b. Competitive Factors—The level and pattern of future compensation changes may be affected by competitive factors, including competition for employees both within the plan sponsor's industry and within the geographical areas in which the plan sponsor operates, and global price competition. Unless the **measurement period** is short, the actuary should not give undue weight to short-term patterns.
- c. Collective Bargaining—The collective bargaining process impacts the level and pattern of compensation changes. However, it may not be appropriate

to assume that future contracts will provide the same level of compensation changes as the current or recent contracts.

- d. Compensation Volatility—If certain elements of compensation, such as bonuses and overtime, tend to vary materially from year to year, or if aberrations exist in recent compensation amounts, then volatility should be taken into account. In some circumstances, this may be accomplished by adjusting the base amount from which future compensation elements are projected (for example, the projected bonuses might be based on an adjusted average of bonuses over the last 3 years). In some other circumstances, an additional assumption regarding an expected increase in pay in the final year of service may be used.
- e. Expected Plan Freeze or Termination—In some situations, as stated in section 3.8.3(h), the actuary may expect the plan to be frozen or terminated at a determinable date. In these situations, the compensation increase assumption may reflect a shortened **measurement period** that ends at the expected termination date.

3.10.3 Multiple Compensation Increase Assumptions—The actuary may use multiple compensation increase assumptions in lieu of a single compensation increase assumption. Examples of multiple compensation increase assumptions include the following:

- a. Select and Ultimate Assumptions—Assumed compensation increases vary by period from the **measurement date** (for example, x% increases for the first 5 years following the **measurement date**, and y% thereafter) or by age or service.
 - b. Separate Assumptions for Different Employee Groups—Different compensation increases are assumed for two or more employee groups that are expected to receive different levels or patterns of compensation increases.
 - c. Separate Assumptions for Different Compensation Elements—Different compensation increases are assumed for two or more compensation elements that are expected to change at different rates (for example, x% bonus increases and y% increases in other compensation elements).
- 3.11 Selecting Other Economic Assumptions**—In addition to **inflation**, investment return, discount rate, and compensation increase assumptions, other economic assumptions may be required for measuring certain pension obligations. The actuary should follow the general process described in section 3.3 to select these assumptions. The selected assumptions should also satisfy the consistency requirement of section 3.12. Other economic assumptions may include the following:

- 3.11.1 **Social Security**—Social Security benefits are based on an individual’s covered earnings, the OASDI contribution and benefit base, and changes in the cost of living. Changes in the OASDI contribution and benefit base are determined from changes in national average wages, which reflect the change in national productivity and **inflation**.
- 3.11.2 **Cost-of-Living Adjustments**—Plan benefits or limits affecting plan benefits, including the Internal Revenue Code (IRC) section 401(a)(17) compensation limit and section 415(b) maximum annuity, may be automatically adjusted for **inflation** or assumed to be adjusted for **inflation** in some manner (for example, through regular plan amendments). However, for some purposes (such as qualified pension plan minimum required contribution calculations), the actuary may be precluded by applicable laws or regulations from anticipating future plan amendments or future cost-of-living adjustments in certain IRC limits.
- 3.11.3 **Rate of Payroll Growth**—As a result of terminations and new participants, total payroll generally grows at a different rate than does a participant’s salary or the average of all current participants combined. As such, when a payroll growth assumption is needed, the actuary should use an assumption that is consistent with but typically not identical to the compensation increase assumption. One approach to setting the payroll growth assumption may be to reduce the compensation increase assumption by the effect of any assumed merit increases. The actuary should apply professional judgment in determining whether, given the purpose of the measurement, the payroll growth assumption should be based on a closed or open group and, if the latter, whether the size of that group should be expected to increase, decrease, or remain constant.
- 3.11.4 **Growth of Individual Account Balances**—Certain plan benefits have components directly related to the accumulation of real or hypothetical individual account balances (for example, floor-offset arrangements and cash balance plans).
- 3.11.5 **Variable Conversion Factors**—Measuring certain pension plan obligations may require converting from one payment form to another, such as converting a projected individual account balance to an annuity, converting an annuity to a lump sum, or converting from one annuity form to a different annuity form. The conversion factors may be variable (for example, recalculated each year based on a stated mortality table and interest rate equal to the yield on 30-year Treasury bonds).
- 3.12 **Consistency among Assumptions Selected by the Actuary for a Particular Measurement**—With respect to a particular measurement, the actuary should select economic assumptions that are consistent with the other assumptions selected by the actuary, including demographic and other noneconomic assumptions, unless an assumption considered individually is not material (see section 3.5.2). For example, if an employer’s business is in decline and the effect of that decline is reflected in the turnover assumption, it may be

appropriate to reflect a change in the retirement assumption, and it may also be appropriate to reflect a change in the compensation increase assumption.

A number of factors may interact with one another and may be components of other economic assumptions, such as **inflation**, economic growth, and risk premiums. In some circumstances, consistency may be achieved by using the same **inflation**, economic growth, and other relevant components in each of the economic assumptions selected by the actuary.

Consistency is not necessarily achieved by maintaining a constant difference between one economic assumption and another. For each **measurement date**, the actuary should reassess the individual assumptions selected by the actuary and the relationships among them, and make appropriate adjustments.

The actuary is not required to select assumptions that are consistent with assumptions not selected by the actuary.

- 3.13 **Reviewing Assumptions Previously Selected by the Actuary**—At each **measurement date**, the actuary should determine whether the economic assumptions selected by the actuary for a previous **measurement date** continue to be reasonable. In making this determination, the actuary should take into account changes in relevant factors known to the actuary that may affect future experience. The actuary should also review recent gain and loss analyses, if any. In addition, the actuary should consider whether an experience study should be performed; however, the actuary is not required to perform an experience study. For each previously selected assumption that the actuary determines is no longer reasonable, the actuary should select a reasonable new assumption.
- 3.14 **Assessing Assumptions Not Selected by the Actuary**—At each **measurement date**, the actuary should assess the reasonableness of each economic assumption that the actuary has not selected (other than **prescribed assumptions or methods set by law** or assumptions disclosed in accordance with section 4.2[b]), using the guidance set forth in this standard to the extent practicable.
- 3.15 **Phase-In of Changes in Assumptions**—If an economic assumption is being phased in over a period that includes multiple **measurement dates**, the actuary should determine the reasonableness of the economic assumption and its consistency with other assumptions as of the **measurement date** at which it is applied, without regard to changes to the assumption planned for future **measurement dates**. If the actuary determines that an economic assumption is not reasonable as of the **measurement date** at which it is applied, the actuary should select a reasonable new assumption.
- 3.16 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In

addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 4, 23, *Data Quality*, 25, 35, 41, and 51. In addition, the actuary should disclose the following in such actuarial reports:

4.1.1 **Assumptions Used**—The actuary should describe each significant economic assumption used in the measurement and, to the extent known, whether the assumption represents an estimate of future experience, an observation of the estimates inherent in market data, or a combination thereof. The actuary should also include a disclosure of any explicit adjustment made in accordance with section 3.5.1 for adverse deviation or plan provisions that are difficult to measure. Sufficient detail should be shown to permit another qualified actuary to assess the level and pattern of each assumption.

Depending on a particular measurement's circumstances, the actuary may disclose information about specific interrelationships among the assumptions (for example, investment return: x% per year, net of investment expenses and including **inflation** at y%).

4.1.2 **Rationale for Assumptions**—For each economic assumption that has a significant effect on the measurement and that the actuary has selected, the actuary should disclose the information and analysis used to support the actuary's determination that the assumption is reasonable.

For each economic assumption that has a significant effect on the measurement and that the actuary has not selected (other than **prescribed assumptions or methods set by law** or assumptions disclosed in accordance with section 4.2[a] or [b]), the actuary should disclose the information and analysis used to support the actuary's determination that the assumption does not significantly conflict with what, in the actuary's professional judgment, is reasonable for the purpose of the measurement.

The disclosures should be based on the economic assumptions as of the **measurement date** at which they are applied without regard to changes to the assumptions planned for future **measurement dates**. These disclosures may be brief but should be pertinent to the plan's circumstances. For example, the actuary may disclose any specific approaches used, sources of external advice, and how past experience and future expectations were considered in determining the assumption to be reasonable. If applicable, the actuary should disclose the time period of relevant plan or plan sponsor experience that was last analyzed, including the date of any study used in the selection process.

4.1.3 **Changes in Assumptions**—The actuary should disclose any changes in the significant economic assumptions from those previously used for the same type of measurement. The general effects of the changes should be disclosed in words or by numerical data, as appropriate. For situations in which both the demographic assumptions and economic assumptions have changed from those previously used for the same type of measurement, the actuary may disclose the general effects of the changes separately or combined, as appropriate. For each assumption that is neither a **prescribed assumption or method set by another party** nor a **prescribed assumption or method set by law**, the actuary should include an explanation of the information and analysis that led to the change.

The disclosure may be brief but should be pertinent to the plan’s circumstances. The disclosure may reference any study performed, including the date of the study.

4.1.4 **Changes in Circumstances**—The actuary should refer to ASOP No. 41 for communication and disclosure requirements regarding changes in circumstances known to the actuary that occur after the **measurement date** and that would affect economic assumptions selected as of the **measurement date**.

4.2 **Disclosure about Assumptions Not Selected by the Actuary**—The actuary’s report should state the source of any assumption that the actuary has not selected.

With respect to assumptions that the actuary has not selected, other than **prescribed assumptions or methods set by law**, the actuary’s report should identify the following, if applicable:

- a. any such assumption that significantly conflicts with what, in the actuary’s professional judgment, is reasonable for the purpose of the measurement (section 3.14); or
- b. any such assumption that the actuary is unable to assess for reasonableness for the purpose of the measurement (section 3.14).

4.3 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial report:

- a. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method set by a party other than the actuary; and
- b. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.4 **Confidential Information**—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

Economic assumptions have a significant effect on any pension obligation measurement. Small changes of 25 or 50 basis points in these assumptions can change the measurement by several percentage points or more. Assumptions such as compensation increases or cash balance crediting rates are often used to determine projected benefit streams for valuation purposes. The discount rate assumption, arguably the most critical economic assumption in determining a pension obligation, is used to determine the discounted present value of all benefit streams that are part of such obligation measurement.

Historically, actuaries have used various practices for selecting economic assumptions. For example, some actuaries have looked to surveys of economic assumptions used by other actuaries, some have relied on detailed research by experts, some have used highly sophisticated projection techniques, and many actuaries have used a combination of these.

The first decade of the 21st century contained a significant amount of debate inside and outside the actuarial profession regarding the measurement of pension obligations. Much of the debate centered on the economic assumptions actuaries use to measure these obligations. The decade also saw the emergence of a financial economic viewpoint on pension obligations. Applying financial economic theory to the measurement of pension obligations has been controversial and has produced a significant amount of debate in the actuarial profession, which has continued in the present decade.

Current Practices

The actuary's discretion over economic assumptions has been curtailed in many situations. In the private single employer plan arena, the IRS, PBGC, and FASB have promulgated rulings that have limited or effectively removed an actuary's judgment regarding the discount rate used for current-year funding or accounting. Actuaries can still set other economic assumptions, such as compensation increases, inflation, or fixed income yields.

For plans other than private single-employer plans (for example, church plans, multiemployer plans, public plans), the discount rate for current-year funding requirements may or may not be prescribed by other entities. Funding valuations for these types of plans often use a discount rate related to the expected return on plan assets. In practice, this discount rate (return on asset) assumption may be set by the legislative body, plan sponsor, a governing board of trustees, or the actuary. The actuary may advise the plan sponsor about the selection of the discount rate.

As in the single-employer situation, the actuary may have discretion over other economic assumptions used to measure obligations for plans other than private single-employer plans.

Alternatively, the actuary may be in an advisory position, helping the legislative body, plan sponsor, or governing board of trustees select the assumptions.

The focus on solvency in the private single-employer plan arena has come along with prescribed economic assumptions that are linked to capital market indices. Actuaries practicing in this area are becoming accustomed to changing assumptions frequently. In nonprescribed situations, practice is still dependent upon the individual actuary. Many actuaries change assumptions infrequently, while other actuaries reevaluate the assumptions as of each measurement date and change economic assumptions more frequently. In the public plan arena, many entities perform assumption reviews every few years, and these reviews may or may not lead to assumption adjustments.

In preparing calculations for purposes other than current-year plan valuations, actuaries often use economic assumptions that are different from those used for the current-year valuation.

The following list of references is a representative sample of available sources of economic data and analyses that may be useful when selecting economic assumptions. It is not intended to be an exhaustive list.

1. General Comprehensive Sources

- a. Kellison, Stephen G. *The Theory of Interest*. 3rd ed. Colorado Springs, CO: McGraw-Hill, 2008.
- b. *Statistics for Employee Benefits Actuaries*. Committee on Retirement Systems Practice Education, and the Pension and Health Sections, Society of Actuaries. Updated annually.
- c. *Stocks, Bonds, Bills, and Inflation (SBBI)*. Chicago, IL: Ibbotson Associates. Annual Yearbook, market results 1926 through previous year.

2. Recent Data, Various Indexes, and Some Historical Data

- a. U.S. Bureau of the Census. *Statistical Abstract of the United States*. https://www.census.gov/library/publications/time-series/statistical_abstracts.html
- b. U.S. Department of Labor, Bureau of Labor Statistics. *Consumer Price Index*. <http://www.bls.gov/cpi/>
- c. U.S. Federal Reserve Weekly Statistical Release H.15. Interest rate information for selected Treasury securities. <http://www.federalreserve.gov/releases/h15/>

- d. U.S. House of Representatives, Committee on Ways and Means. *Green Book: Background Material and Data on Programs within the Jurisdiction of the Committee.* <http://greenbook-waysandmeans.house.gov/>
 - e. U.S. Social Security Administration. *Social Security Bulletin.* <http://www.ssa.gov/policy/docs/ssb/>
3. Forecasts
- a. *Blue Chip Financial Forecasts.* Capital Publications, Inc., P.O. Box 1453, Alexandria, VA 22313-2053. March and October issues contain long-range forecasts for interest rates and inflation.
 - b. Congressional Budget Office's economic forecast. The forecast projects three-month Treasury Bill rates, 10-year Treasury Note rates, CPI-U, gross domestic product, and unemployment rates.
<http://www.cbo.gov/publication/43907>

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of the proposed revision of ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, was issued in June 2019 with a comment deadline of September 15, 2019. Eight comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Pension Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each. Minor wording or punctuation changes that are suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the Pension Committee and the ASB. Unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comments	One commentator suggested that this ASOP and ASOP No. 35, <i>Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations</i> , should be merged into a single ASOP on selection of assumptions for measuring pension obligations.
Response	The reviewers may consider merging the two ASOPs in the future.
Comment	One commentator suggested publishing a definition of economic assumption.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested that the title of appendix 1 should be revised to include “Representative Sources.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested it would be preferable to release second exposure drafts of ASOP Nos. 4, <i>Measuring Pension Obligations and Determining Pension Plan Costs or Contributions</i> , 27, and 35 at the same time.
Response	The reviewers note that there were no expected changes to the second exposure draft of ASOP No. 4 that necessitated delaying the second exposure drafts of ASOP Nos. 27 and 35.
Comment	One commentator suggested that the title of the ASOP should refer to “pension commitments” rather than “obligations.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested reviewing the use of the phrases “should consider” and “should take into account” for consistency.
Response	The reviewers made modifications throughout the ASOP as needed for consistency. To the extent possible, the reviewers included a course of action after the phrase “should consider,” as suggested in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , section 2.1(a).

Comment	One commentator observed that the standard allows the actuary to not analyze the aggregate effect of assumptions not selected by the actuary, even if that effect is significant, provided each individual assumption not selected by the actuary does not have a significant effect.
Response	The reviewers note that the second exposure draft of ASOP No. 4 provides proposed guidance to address this issue.

SECTION 2. DEFINITIONS

Section 2.4, Merit Adjustments

Comment	One commentator suggested that definition 2.4 and related discussion be moved to ASOP No. 35.
Response	The reviewers note that there is not universal agreement as to whether these assumptions are economic or non-economic and believe that the current guidance is sufficient.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 3.2, Identification of Economic Assumptions Used in the Measurement

Comment	One commentator suggested that the title of this section should be Identification of Types of Economic Assumptions Used in the Measurement to be consistent with the first sentence of this section and with section 3.2.1 of ASOP No. 35.
Response	The reviewers agree and modified the title in response to this comment.
Comment	One commentator felt that the difference between the use of materiality in sections 3.2(b) and 3.2(c) was not clear.

Response The reviewers disagree and made no change in response to this comment.

Section 3.5.1, Adverse Deviation or Plan Provisions That Are Difficult to Measure

Comment	One commentator suggested that section 3.5.1 should be modified to be consistent with the disclosure requirements in section 4.1.1.
Response	The reviewers agree and modified the language in section 3.5.1.

Section 3.5.3, Cost of Using Refined Assumptions

Comment	One commentator suggested deleting the last sentence in section 3.5.3.
Response	The reviewers agree and modified the language.

Section 3.5.5, Changes in Circumstances

Comment	One commentator suggested that in section 3.5.5 either “may” means “has permission to,” in which case it is inappropriate, or else it means “might,” in which case it is purely educational and provides no guidance and suggested the sentence be deleted.
Response	The reviewers believe the use of “may” is consistent with the guidance in ASOP No. 1, section 2.1(b) but deleted “if appropriate” in response to this comment.

Section 3.6.1, Reasonable Assumption Based on Future Experience or Market Data

Comment	One commentator suggested that section 3.6.1 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.

Section 3.7, Selecting an Inflation Assumption

Comment	One commentator suggested that section 3.7 (and subsections) was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.

Section 3.7.2, Select and Ultimate Inflation Rates

Comment	One commentator suggested that in section 3.7.2 either “may” means “has permission to,” in which case it is inappropriate, or else it means “might,” in which case it is purely educational and provides no guidance and suggested the sentence be deleted.
Response	The reviewers believe the use of “may” is consistent with the guidance in ASOP No. 1, section 2.1(b) and made no change in response to this comment.

Section 3.8, Selecting an Investment Return Assumption	
Comment	One commentator suggested that section 3.8 (and subsections) was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.8.1, Data	
Comment	One commentator suggested that section 3.8.1(c) was not relevant when selecting an investment return assumption and that sections 3.8.1(a) and (b) provided sufficient guidance.
Response	The reviewers note that section 3.8.1 states, “the actuary should review appropriate investment data” and made no change in response to this comment.
Section 3.8.3, Measurement-Specific Considerations	
Comment	One commentator suggested that the last sentence in section 3.8.3(a) should be modified to add “if appropriate” at the beginning of the sentence.
Response	The reviewers modified this section in response to this and other comments.
Comment	One commentator suggested that sections 3.8.3(c) and 3.8.3(j) should be combined and offered suggested wording.
Response	The reviewers disagree with the suggested wording and that the sections should be combined but modified the language in section 3.8.3(j) to improve clarity in the guidance.
Comment	One commentator suggested that the terms “forward-looking expected arithmetic and geometric returns” should be eliminated altogether.
Response	The reviewers note that “arithmetic and geometric returns” are commonly used in the investment consulting community. Therefore, the reviewers made no change in response to this comment.
Comment	One commentator suggested that the passage “The use of a forward-looking expected geometric return as an investment return assumption will produce an accumulated value that generally converges to the median accumulated value as the time horizon lengthens” should be deleted.
Response	The reviewers agree and deleted the entire paragraph in response to this comment.
Section 3.9, Selecting a Discount Rate	
Comment	One commentator suggested that section 3.9 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested that the first two sentences in section 3.9 should be combined into one.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested revised wording for 3.9(c).
Response	The reviewers believe that the current guidance is appropriate and did not make any changes in response to this comment.
Section 3.10, Selecting a Compensation Increase Assumption	
Comment	One commentator suggested that section 3.10 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.13, Reviewing Assumptions Previously Selected by the Actuary	
Comment	One commentator suggested that it would be helpful if this section made clear that the actuary should also review the economic assumptions used by the actuary who last performed the measurement before using them to ensure they remain reasonable.
Response	The reviewers disagree and believe the guidance in this ASOP is clear. Therefore, the reviewers made no change in response to this comment.

Section 3.15, Phase-In of Changes in Assumptions	
Comment	One commentator suggested that this section should be clarified to indicate that the assessment of reasonableness and consistency only apply when the phase-in of assumptions is selected by the actuary and should refer to the prior section (section 3.14 in ASOP No. 27 and section 3.8 in ASOP No. 35) for when it is not selected by the actuary.
Response	The reviewers disagree and refer the commentator to section 1.2, which states “When an economic assumption is not selected by the actuary, the guidance in section 3.14 and section 4 concerning assessment and disclosure applies.”
Comment	One commentator suggested that this section is not clear or necessary and was concerned this section could be read to apply to select and ultimate assumptions.
Response	The reviewers disagree and believe that the guidance “phased in over a period that includes multiple measurement dates” is sufficiently clear and made no change in response to this comment.
Section 3.16, Documentation	
Comment	One commentator suggested that if section 3.16 is retained, the ASB should change “should consider” to “should.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested that section 3.16 would require retaining documentation that may contain proprietary work product that is not required to be provided to another actuary to assume the assignment.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Two commentators felt section 3.16 is an unnecessary or inappropriate addition to the ASOP. However, one commentator suggested modification to the language if this section was retained.
Response	The reviewers disagree that section 3.16 is an unnecessary or inappropriate addition to the ASOP. However, the reviewers modified the language in response to the one commentator’s suggested language.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator suggested the first sentence of section 4.1 be changed to add “with respect to required disclosures” at the end to specify what the actuary should consider in the listed ASOPs when issuing an actuarial report.
Response	The reviewers disagree and made no change in response to this comment.
Section 4.1.1, Assumptions Used	
Comment	One commentator suggested that the first sentence of section 4.1.1 should be clarified to only require the disclosure that the assumption “represents an estimate of future experience, the actuary’s observation of the estimates inherent in market data, or a combination thereof” if the assumption was selected by the actuary.
Response	The reviewers disagree that the disclosure should only be required if the assumption was selected by the actuary but modified the language in response to this comment.
Section 4.1.2, Rationale for Assumptions	
Comment	One commentator suggested that the second paragraph of section 4.1.2 should allow the actuary to assess the reasonableness of a combination of assumptions rather than each assumption selected by another party.
Response	The reviewers disagree and made no change in response to this comment.

Comment	One commentator felt that the current requirement that the actuary disclose if he or she believes the assumption significantly conflicts with what would be reasonable is appropriate and sufficient, and objects to requiring the actuary to provide supporting information and analysis for an assumption that does not seem to significantly conflict.
Response	The reviewers disagree, believe the current guidance is appropriate, and made no change in response to this comment.
Section 4.2, Disclosures About Assumptions Not Selected by the Actuary	
Comment	One commentator suggested that the term “source” in section 4.2 should be clarified.
Response	The reviewers disagree and made no change in response to this comment.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 28**

Revised Edition

**Statements of Actuarial Opinion Regarding
Health Insurance Assets and Liabilities**

**Developed by the
ASOP No. 28 Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2021**

Doc. No. 200

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June 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 28

This document contains the revision of ASOP No. 28, now titled *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities*.

History of the Standard

In April 1997, the ASB adopted ASOP No. 28, *Compliance with Statutory Statement of Actuarial Opinion Requirements for Hospital, Medical and Dental Service or Indemnity corporations and for Health Maintenance Organizations*.

In June 2011, this standard was renamed *Statements of Actuarial Opinion Regarding Health Insurance Liabilities and Assets* and revised in consideration of the development of the Health Annual Financial Statement Blank and the revised health actuarial opinion instructions approved by the National Association of Insurance Commissioners (NAIC) in June 2009. The scope was also broadened to encompass all statements of actuarial opinion regarding health insurance liabilities and assets of health insurance or reinsurance companies and other health insurance financing systems, such as health benefit plans provided by self-insured or government plan sponsors. Additionally, in December 2012, the language in section 1.2 of this standard was updated.

Since the last update of this standard, changes have been made to ASOP No. 5, *Incurred Health and Disability Claims*, and ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*, due in part to the changes imposed by the Affordable Care Act. Some assets and liabilities that are included in the scope of the actuarial opinion have changed, and others have gained prominence. Therefore, this revision of ASOP No. 28 reflects these changes in actuarial practice.

This revision to the standard also addresses concerns reported by regulatory actuaries relating to the need for improved consistency of the information provided in the actuarial memorandum supporting an actuarial opinion.

While the standard currently applies to statements of actuarial opinions relating to assets and liabilities other than the NAIC statement of actuarial opinion, the task force recognized the need to broaden the guidance to more fully reflect the needs of actuaries preparing such statements of actuarial opinions. This revision clarifies guidance relating to the applicability of this standard

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for actuaries issuing non-statutory statements of actuarial opinions or statutory statements of actuarial opinions for health entities not subject to the NAIC rules.

Exposure Draft

The exposure draft was issued in June 2020 with a comment deadline of November 13, 2020. Three comment letters were received and considered in making changes that were reflected in the final ASOP.

Notable Changes from Exposure Draft

Notable changes made to the exposure draft are summarized below. Notable changes do not include changes made to improve readability, clarity, or consistency.

1. The guidance in section 1.2, Scope, was clarified.
2. The definitions for section 2.9, Health Insurance Asset (Asset), and section 2.10, Health Insurance Liability (Liability), were clarified.
3. The language in section 3.3, Basis of Assets and Liabilities; section 3.6, Asset and Liability Evaluation; and section 4.1, Required Disclosures in an Actuarial Report, was revised to improve clarity.
4. A disclosure was added in section 4.1(h) to clarify disclosure requirements for section 3.6.
5. The disclosure requirements in section 4.1, Required Disclosures in an Actuarial Report, were clarified for situations where the actuarial memorandum is issued separately from the statement of actuarial opinion.

Notable Changes from the Existing ASOP

A cumulative summary of the notable changes from the existing ASOP is summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. The title was modified to reflect the increasing importance of actuarial assets to health insurance entities and to be consistent with the current title of ASOP No. 42.
2. Sections 1.1, Purpose, and 1.2, Scope, were clarified to apply to actuaries issuing or reviewing any statement of actuarial opinion and associated actuarial reports or memoranda including, but not limited to, opinions prepared in accordance with the NAIC's annual statement requirements.

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3. Section 3.2, Assets and Liabilities Being Opined Upon, was clarified to state that the identification of assets and liabilities being opined upon includes those items with a value of zero.
4. Section 3.3, Basis of Assets and Liabilities, was expanded to address information that should be included in the description of the basis of the assets and liabilities.
5. Section 3.6, Asset and Liability Evaluation, was expanded to address the use of an explicit provision for adverse deviation as well as implicit conservatism in assumptions.
6. Section 3.9, Collectability of Actuarial Assets and Offsets to Liabilities, was expanded to address that collectability guidance currently applicable only to the collectability of ceded reinsurance applies to all actuarial assets and offsets to actuarial liabilities.
7. Section 3.11, Statements of Actuarial Opinion, was expanded to address the application of the documentation requirements for different types of opinions, when applied to statements of actuarial opinions other than statutory NAIC opinions and when the opinion is intended to meet the “good and sufficient” standard.
8. Sections 3.13, Reliance on Data, Assumptions, Methods, Supporting Analysis, and Information Supplied by Others, and 3.14, Evaluation Based on Analyses or Opinions of Another Actuary or Expert, were added to provide guidance regarding reliance on others.
9. Guidance was added to section 4.1, Required Disclosures in an Actuarial Report, related to the information needed to be included in a written statement of actuarial opinion involving assets and liabilities when it is provided as a separate document from the actuarial report or memorandum.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in June 2021 to adopt this standard.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

**STATEMENTS OF ACTUARIAL OPINION
REGARDING HEALTH INSURANCE ASSETS AND LIABILITIES**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to issuing or reviewing a statement of actuarial opinion (sometimes referred to as “actuarial opinion” or “opinion”) regarding **health insurance assets and liabilities**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to issuing or reviewing statements of actuarial opinion and any associated **actuarial memorandum** with respect to **health insurance assets** and **liabilities** of insurance companies, reinsurance companies, or other health insurance financing systems that provide similar coverages (such as **health benefit plans** provided by self-insured or government plan sponsors). The standard applies to, but is not limited to, actuaries issuing or reviewing actuarial opinions prepared in accordance with the National Association of Insurance Commissioners’ (NAIC’s) annual statement requirements.

For actuaries issuing or reviewing statements of actuarial opinion that include both **health insurance assets** and **liabilities**, and **non-health insurance assets** and **liabilities**, other standards may apply in addition to this standard (such as ASOP No 22, *Statements of Opinion Based on Asset Adequacy Analysis for Life and Health Insurers*) or instead of this standard (such as ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*).

If the actuary is performing actuarial services that involve reviewing an opinion, the actuary should use the guidance in this standard to the extent practicable.

The standard does not apply to actuaries issuing or reviewing statements of actuarial opinion that are subject to the following:

- ASOP No. 3, *Continuing Care Retirement Communities*;
- ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*;
- ASOP No. 20, *Discounting of Property/Casualty Unpaid Claim Estimates*;

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- ASOP No. 36;
- ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*; or
- ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*.

If the actuary determines that the guidance in this ASOP conflicts with a cross-practice ASOP (applies to all practice areas), this ASOP governs.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work performed involving statements of actuarial opinion regarding **health insurance assets** and **liabilities** issued on or after July 1, 2022.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Actuarial Memorandum**—A written actuarial report (as defined in ASOP No. 41, *Actuarial Communications*) that provides information regarding the analyses completed in support of statements of actuarial opinion regarding **health insurance assets** and **liabilities**.
- 2.2 **Claim**—A demand for payment under the coverage provided by a plan or contract.
- 2.3 **Collectability**—The likelihood of receiving the amount of money owed or the **asset** accrued.
- 2.4 **Contract Reserve**—A **liability** established when a portion of the premium due prior to the **valuation date** is designed to pay all or a part of the **claims** expected to be incurred after

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the **valuation date**. A **contract reserve** may or may not include a provision for the unearned premium reserves. A **contract reserve** may also be referred to as an active life reserve or policy reserve.

- 2.5 **Counterparty**—Another entity involved in a financial transaction.
- 2.6 **Counterparty Risk**—The risk that any **counterparty** does not fulfill its contractual obligations.
- 2.7 **Experience Period**—The period of time to which historical data used for actuarial analysis pertains.
- 2.8 **Health Benefit Plan**—A contract, such as an insurance policy, or other financial arrangement providing medical, prescription drug, dental, vision, disability income, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the risk-bearing entity.
- 2.9 **Health Insurance Asset (Asset)**—An asset included in the scope of the statement of actuarial opinion related to **health benefit plans**. Examples may include risk adjustment transfer payment receivables, pharmacy rebate receivables, provider settlement receivables, and Medicare Part D settlement receivables.
- 2.10 **Health Insurance Liability (Liability)**—A **liability** included in the scope of the statement of actuarial opinion related to **health benefit plans**. Examples may include unpaid **claims liabilities**, unpaid loss adjustment expenses, medical loss ratio rebates, **liabilities** for settlements of provider contracts, **contract reserves**, experience refund **liabilities**, premium deficiency reserves, premium stabilization reserves, and **liabilities** for reinsurance payable.
- 2.11 **Moderately Adverse Conditions**—Conditions that include one or more unfavorable, but not extreme, events that have a reasonable probability of occurring.
- 2.12 **Provision for Adverse Deviation**—An explicit amount to make some provision for uncertainty in an **asset** or **liability**. This sometimes is called a provision for uncertainty or a margin for uncertainty.
- 2.13 **Valuation Date**—The date as of which the **assets** or **liabilities** are estimated for the actuarial opinion provided.

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Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Intended Purpose and Users of the Statement of Actuarial Opinion**—The actuary should identify the intended purpose and intended users of the statement of actuarial opinion and any associated **actuarial memorandum**. For example, the intended purpose may be to satisfy the requirements for such an opinion and memorandum under the NAIC Health Annual Statement Instructions, and the intended users may be the company and its regulators. Other examples may be when an actuary prepares a statement of actuarial opinion in support of an application for a certificate of authority (the intended purpose) to a regulator (the intended user) or when an actuary prepares a statement of actuarial opinion estimating unpaid **claims liabilities** (the intended purpose) for a self-funded employer (the intended user).
- 3.2 **Assets and Liabilities Being Opined Upon**—The actuary should identify applicable balance sheet items within the scope of the opinion (i.e., the **health insurance assets** and **health insurance liabilities**), including items that may have a value of zero. For example, premium deficiency reserves or risk adjustment estimates may have a value of zero. The actuary should consider identifying balance sheet items excluded from the scope of the opinion along with the justification for the exclusion. The actuary should identify the following regarding the **assets** and **liabilities** for which the opinion is being prepared as follows:
- a. the **asset** and **liability** amount(s); and
 - b. the **valuation date**.
- 3.3 **Basis of Assets and Liabilities**—The actuary should identify and describe the basis of the **assets** and **liabilities**. The basis may be dependent upon regulatory or accounting requirements. The actuary should include the following items in the description of the basis, if applicable:
- a. the data, assumptions, methods, and procedures used to determine the **assets** and **liabilities**;
 - b. the accounting standards applicable for the **assets** and **liabilities** (for example, US SAP, US GAAP, IFRS);
 - c. whether the amounts are gross or net of specified recoverables, such as ceded reinsurance or salvage and subrogation, and whether the amounts follow any requirements for the treatment of these amounts specified by a particular accounting method;
 - d. whether there is a **provision for adverse deviation**, and, if so, the amount of the **provision for adverse deviation**; and

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- e. whether there is some level of implicit conservatism included in the items within the scope of the actuarial opinion.

In the description of the basis of the **assets** and **liabilities**, the actuary should include any additional items that are needed to describe the amounts sufficiently for the actuary's evaluation of the **assets** and **liabilities**.

To the extent the actuary is not able to identify the basis of the **assets** and **liabilities**, the actuary should request this information. If unable to obtain this information, the actuary should document what the actuary assumed to be the intended basis of the **assets** and **liabilities** and provide justification for the opinion issued in accordance with section 3.11.

- 3.4 **Scope of the Analysis Underlying the Statement of Actuarial Opinion**—The actuary should identify the scope of the analysis upon which the opinion is based, which includes the following:

- a. the dates relevant to the actuary's analysis:
 - i. **valuation date**;
 - ii. **experience period(s)** for any data used, including the runout period;
 - iii. the date through which material information known to the actuary is included in forming the opinion, if it differs from the date of the opinion; and
 - iv. the date of the opinion.
- b. the **assets** and **liabilities** included in the scope of the actuary's opinion. This should include any major components of the **assets** and **liabilities**. For example, the components of unpaid **claims liabilities** may include amounts determined based on lag-based methodologies, capitation amounts, and offsets for reinsurance;
- c. for **asset** and **liability** items disclosed in the statement of actuarial opinion, whether the actuary's opinion applies to those items in the aggregate or individually;
- d. when the opinion is limited to only a portion of the **assets** or **liabilities**, the exposure to be covered by the **assets** or **liabilities** (for example, type of coverage, line of business, year, state); and

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- e. any other items that, in the actuary’s professional judgment, are needed to sufficiently describe the scope of the actuary’s analysis.
- 3.5 **Materiality**—The actuary should evaluate materiality based on the actuary’s professional judgment and the intended purpose for which the actuary is performing actuarial services related to a statement of actuarial opinion and any associated **actuarial memorandum**.

The actuary should document the basis used to determine materiality.

When evaluating materiality, the actuary should understand which financial values are important to the intended users of the statement of actuarial opinion and the associated **actuarial memorandum** and how those financial values are likely to be affected by changes in the **assets** and **liabilities**. For example, for a statement of actuarial opinion for an insurance company that is to be used for financial reporting to insurance regulators, materiality might be evaluated in terms of the company’s reported **liabilities** or statutory surplus.

- 3.6 **Asset and Liability Evaluation**—The actuary should evaluate the **assets** and **liabilities** within the scope of the opinion for reasonableness at a level of aggregation consistent with the purpose of the opinion and consistent with the basis of the **assets** and **liabilities**.

The actuary should consider the amount being evaluated to be reasonable if it is within a range of estimates that could be produced by an appropriate analysis that is, in the actuary’s professional judgment, consistent with applicable guidance including, but not limited to, ASOP No. 5, *Incurred Health and Disability Claims*, and ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*. In addition to the methods used, the actuary should take into account, as appropriate, relevant past, present, or reasonably foreseeable future conditions that are likely to have a material effect on the amounts being established.

If the actuary determines that the **asset** or **liability** is outside a reasonable range, considering the purpose of the opinion, such as any “good and sufficient” requirements, the actuary should determine what the actuary believes is a reasonable range or amount.

When evaluating **assets** and **liabilities** for reasonableness, the actuary should take into account the specific characteristics of the policy and contract provisions affecting the **assets** and **liabilities**.

The actuary should determine whether a **provision for adverse deviation** is appropriate to meet the intended purpose of the opinion. The actuary should refer to ASOP Nos. 5 and 42 for guidance as well as any other applicable ASOP covering **assets** and **liabilities**. Examples of **assets** and **liabilities** for which a **provision for adverse deviation** might be appropriate include an explicit offset to a risk adjustment receivable **asset**, or an explicit

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margin on an unpaid **claims liability**. The actuary should identify the amount and document the justification for any **provision for adverse deviation**.

The actuary should evaluate and document the appropriateness of the aggregate level of conservatism, including any **provision for adverse deviation** and conservatism implicit in the assumptions used to estimate the **assets** and **liabilities** within the scope of the actuarial opinion. For example, in one situation, the actuary might state that aggregate conservatism of a certain percentage is appropriate for the intended purpose. In another situation, the actuary might state that it is appropriate that all **assets** and **liabilities** are developed without conservatism.

If the actuary makes use of other personnel within the actuary's control to carry out assignments relative to analysis supporting the opinion, the actuary assumes responsibility for compliance of those assignments with this ASOP. All work performed in support of the opinion should be documented, even if it was not performed by the actuary.

The actuary should document the methods, assumptions, and procedures used in the analysis upon which the opinion is based. When complex calculations or concepts are involved, the actuary should include technical explanations and exhibits in the documentation. Examples of complex calculations may include the determination of unpaid **claims liability**, premium deficiency reserves, sensitivity tests, and follow up studies.

The actuary should also document the sources of the data used and how the reasonability of the data was determined, including support for any reconciliation with amounts reported in the financial statement. When determining the reasonability of the data, the actuary should comply with ASOP No. 23, *Data Quality*.

When the opinion is provided to meet regulatory requirements, the actuary should follow the detailed requirements specified by regulators regarding the form and content of supporting reports and documentation.

3.7 **Prior Opinion**—If the actuary prepared the most recent prior opinion, or, if the actuary is able to review the prior actuary's work, then the actuary should determine whether the current assumptions, procedures, or methods differ from those employed in providing the most recent prior opinion prepared in accordance with this standard. If the current assumptions, procedures or methods differ from those employed in the prior opinion, the actuary should evaluate whether the changes are likely to have resulted in an **asset** or **liability** that is materially different and should document the changes appropriately.

The use of assumptions, procedures, or methods for new **liability** segments (for example, a new line of business or product) or new **asset** amounts is not considered a change in assumptions, procedures, or methods within the meaning of this section. Similarly, when the determination of the reasonableness of the **asset** or **liability** is based on the periodic

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updating of experience data, factors, or weights, such periodic updating is not considered a change in assumptions, procedures, or methods within the meaning of this section. However, the actuary should evaluate whether such periodic updating is appropriate for the current opinion and refer to ASOP Nos. 5, 42, and any other applicable ASOPs for guidance.

The actuary should document the changes in assumptions, procedures, or methods from those employed in the most recent prior opinion prepared in accordance with this standard, unless the actuary concludes the changes are not likely to have a material effect on the **asset or liability**. This standard does not require the actuary to quantify the impact of such changes. If the actuary cannot review the prior actuary's work, then the actuary should document that the prior assumptions, procedures, and methods are unknown.

- 3.8 **Significant Risks and Uncertainties**—The actuary should determine whether there are significant risks and uncertainties that could result in material adverse deviations from the **assets or liabilities**.

If the actuary determines that there are significant risks and uncertainties that could result in material adverse deviation, the actuary should quantify, if practicable, and document such risks and uncertainties, including a description of the major factors or particular conditions underlying the risks and uncertainties.

The actuary is not required to include broad statements about risks and uncertainties, such as those due to economic changes, judicial decisions, political or social forces, nor is the actuary required to include an exhaustive list of all potential sources of risks and uncertainties.

- 3.9 **Collectability of Actuarial Assets and Offsets to Liabilities**—If the scope of the statement of actuarial opinion includes actuarial **assets**, such as risk adjustment amounts receivable, or offsets to **liabilities**, such as ceded reinsurance, the actuary should take into account **collectability** in evaluating the reasonableness of **assets** and **liabilities**.

The actuary should use professional judgment when evaluating **collectability** and may consider the following:

- a. materiality of the **asset** or the offset to a **liability**;
- b. the financial condition of **counterparties**; and
- c. other readily available information.

The actuary should consider soliciting information from management or other appropriate parties regarding **collectability**. Examples of information that may be requested include, but are not limited to, issues relating to **counterparty risk**, **collectability** problems,

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disputes with reinsurers or other **counterparties**, and company practices regarding provisions for uncollectible receivable amounts.

The actuary should document concerns regarding the **collectability** of those **assets** or offsets to **liabilities**. This standard does not require the actuary to quantify the **collectability**. The actuary's consideration of **collectability** does not necessarily imply an opinion on the financial condition of any **counterparty**.

- 3.10 **Follow-up Studies**—When an actuary conducts follow-up studies that involve performing tests of reasonableness of **assets** or **liabilities** determined for prior periods, the actuary should refer to ASOP Nos. 5 and 42. If appropriate, the actuary may use the results of such follow up studies to form an opinion regarding the appropriateness of the **assets** or **liabilities** included in the scope of opinion for the current period. The actuary should document the results of any follow-up studies used in the development of the actuarial **assets** and **liabilities** included in the opinion.
- 3.11 **Statements of Actuarial Opinion**—If the actuary determines that the **assets** and **liabilities** are reasonable for the intended purpose, the actuary may provide an opinion without any limitations, reservations, or qualifications (sometimes referred to as an “unqualified opinion”).

If the actuary determines that the **assets** or **liabilities** are not reasonable for the intended purpose or cannot be evaluated for reasonableness, the actuary should identify the opinion as one of the following:

- a. When the **assets** or **liabilities** fall outside a reasonable range for the intended purpose, the actuary should issue an unfavorable opinion (sometimes referred to as an “adverse opinion”). The actuary should document the reasons for issuing an unfavorable opinion; or
- b. If the actuary cannot evaluate the reasonableness of certain **assets** or **liabilities**, the actuary should issue a limited opinion (sometimes referred to as a “qualified opinion”). The actuary should document the following:
 - i. the **assets** or **liabilities** to which the limitations relate;
 - ii. a description of the limitations of the opinion;
 - iii. if provided by the entity, the amounts of the **assets** or **liabilities** to which the limitations relate. If the amounts for such items are not provided by the entity, the actuary should document that the **assets** or **liabilities** include unknown amounts for such items; and

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- iv. whether the total amount makes a reasonable provision for the specified items other than the items to which the limitations relate.

The actuary is not required to document the limitation if the actuary reasonably believes that the items in question are not likely to be material; or

- c. If the actuary is unable to reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the actuary should document the inability to reach a definitive opinion (sometimes referred to as an “inconclusive opinion”), including a description of the reasons that cause the opinion to be inconclusive.

When the actuary is performing services related to an actuarial opinion to comply with NAIC annual statement instructions, the actuary should follow the guidance in the annual statement instructions, including but not limited to the guidance regarding any prescribed language. In order to issue such actuarial opinion that uses the language “good and sufficient,” the actuary should determine that the **assets** and **liabilities** are sufficient to cover obligations under **moderately adverse conditions** and be satisfied that the actuarial judgments made give recognition to any relevant factors, including the time periods over which the **assets** and **liabilities** will extend.

- 3.12 **Adequacy of Assets Supporting Liabilities**—The actuary should determine whether the adequacy of the **assets** supporting the stated **liabilities** needs to be evaluated. However, this standard does not obligate the actuary to undertake evaluation of the adequacy of the **assets** supporting the stated **liability** amount except as may be needed to comply with any applicable law, regulatory requirement, or other ASOP. For guidance on the analysis of cash flows, the actuary should refer to ASOP No. 7, *Analysis of Life, Health or Property/Casualty Insurer Cash Flows*. For guidance on statements of opinion based on **asset** adequacy analysis, the actuary should refer to ASOP No. 22.
- 3.13 **Reliance on Data, Assumptions, Methods, Supporting Analysis, and Information Supplied by Others**—The actuary may rely on data, assumptions, methods, supporting analysis, and information supplied by others. When practicable, the actuary should review such items for reasonableness and consistency. For further guidance, the actuary should refer to ASOP Nos. 23 and 41. The actuary should document the extent of any such reliance.
- 3.14 **Evaluation Based on Analyses or Opinions of Another Actuary or Expert**—When relying on the analyses or opinions of others to evaluate the reasonableness of the **assets** or **liabilities**, as described in section 3.6, the actuary should take into account the following:
 - a. consistency of the analyses or opinions with the stated purpose of the presentation of the **assets** or **liabilities** and with any likely expectations or requirements of subsequent reviewers (for example a regulator or auditor);

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- b. the appropriateness and reasonableness of the data, methodology, and assumptions underlying the analyses or opinions;
 - c. any items or factors not included in the analyses or opinions that in the actuary's judgement may need to be considered;
 - d. the nature of the business, such as types of lives covered, what is covered, and potential external influences;
 - e. the inherent volatility of the **asset or liability**;
 - f. the amount of the **assets or liabilities** covered by the other actuary or expert's analyses or opinions in comparison to the total **assets or liabilities** within the scope of the actuary's opinion, or other relevant amounts (for example surplus level) that might be affected by a change in the **assets or liabilities**;
 - g. the way in which reasonably likely deviations may affect the total **assets and liabilities** within the scope of the actuary's opinion; and
 - h. the intended purpose of the analyses or opinions of others.
- 3.15 **Documentation**—In addition to the documentation requirements discussed in section 3.1–3.14, the actuary should prepare and retain documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. When preparing documentation, the actuary should prepare documentation in a form such that another qualified actuary in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, including a statement of actuarial opinion and any associated **actuarial memorandum**, the actuary should refer to ASOP Nos. 5, 23, 41, and 42. In addition, the actuary should disclose the following in such actuarial report, as applicable:
- a. the intended purpose and intended users of the statement of actuarial opinion or the **actuarial memorandum** supporting such actuarial opinion (see section 3.1);
 - b. the **assets and liabilities** being opined upon and related information (see section 3.2);

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- c. the basis of the amounts presented (see section 3.3);
- d. the methods, assumptions, and procedures used in the analysis (see sections 3.3 and 3.6), including any technical explanations and exhibits of complex calculations or concepts (see section 3.6);
- e. the scope of the analysis underlying the statement of actuarial opinion and related information (see section 3.4);
- f. basis used to determine materiality (see section 3.5);
- g. any ranges used to evaluate the reasonableness of the **assets** and **liabilities** (see section 3.6);
- h. if the actuary determines that an **asset** or **liability** is outside a reasonable range, the range or amount the actuary believes is reasonable (see section 3.6);
- i. any **provision for adverse deviation** (see section 3.6);
- j. the appropriateness of the aggregate level of conservatism (see section 3.6);
- k. the sources of the data used, and how the reasonability of the data was determined, including support for any reconciliation with amounts reported in the financial statement (see section 3.6);
- l. changes in methods, assumptions, and procedures from those in the most recent prior opinion (see section 3.7);
- m. a description of any significant risks and uncertainties that could result in material adverse deviation, including the major factors or particular conditions underlying the risks and uncertainties (see section 3.8);
- n. any concerns regarding the **collectability** of actuarial **assets** or offsets to **liabilities** (see section 3.9);
- o. results of follow-up studies (see section 3.10);
- p. the rationale for the opinion including any limitations, reservations, or qualifications, or, if applicable, the justification for an adverse opinion or inability to render an opinion (see section 3.11);
- q. whether the adequacy of the **assets** supporting the stated **liabilities** needs to be evaluated (see section 3.12); and

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- r. extent of reliance on work performed or information provided by other parties (see sections 3.13 and 3.14).

The actuary should include the disclosures above for all actuarial **assets** and **liabilities** within the scope of the opinion, even if these items are listed as zero, unless certain items are zero because they are not applicable to the **health benefit plan** issuer. For nonapplicable items, the actuary should provide an explanation of why such items are not applicable.

When the statement of actuarial opinion is issued separately from the supporting **actuarial memorandum**, the actuary should ensure that all applicable disclosures are included in either the statement of actuarial opinion or the **actuarial memorandum**.

When the statement is provided to meet regulatory requirements such as the NAIC Health Annual Statement, additional disclosures may be required to be included in the statement of actuarial opinion and any associated **actuarial memorandum**.

- 4.2 Additional Disclosures in an Actuarial Report—The actuary also should include the following, as applicable, in an actuarial report, including a statement of actuarial opinion and any associated **actuarial memorandum**:

- a. the disclosure in ASOP No. 41, if any material assumption or method was prescribed by applicable law;
- b. the disclosure in ASOP No. 41, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary;
- c. the disclosure in section 4.1(p) regarding any limitations, reservations, qualifications of the opinion, the justification for an adverse opinion, or the inability to render an opinion, if the actuary disclaims responsibility for any material assumptions, methods, or model input; and
- d. the disclosure in ASOP No. 41, if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

In the early 1980s, the National Association of Insurance Commissioners (NAIC) developed standards for a statement of actuarial opinion on reserves and related actuarial items that were to be included in the annual statement filed by health service corporations. In response to this requirement, the American Academy of Actuaries promulgated Financial Reporting Recommendation 10, *Statement of Actuarial Opinion for Health Service Corporation Statutory Annual Statements*, setting forth the actuary's professional responsibilities in providing such an opinion.

The form and content of these actuarial opinions, as specified in the instructions to the statutory statements, deal specifically with reserves and related actuarial items. Prior to the development of professional standards, some actuaries began to address other issues in forming their opinions, including asset adequacy analysis, claim settlement expense reserves, and the financial condition of capitated providers under health maintenance organization contracts.

In April 1997, the ASB (Actuarial Standards Board) adopted ASOP No. 28. The original version of ASOP No. 28 was a revised and reformatted version of Financial Reporting Recommendation (FRR) 10, *Statement of Actuarial Opinion for Health Service Corporation Statutory Annual Statements*. The reformatting was done to conform to the revised uniform format for actuarial standards of practice adopted by the ASB in 1996. FRR 10 offered guidance to actuaries providing statutory statements of actuarial opinion for health service corporations. FRR 10 followed the Instructions to the 1983 NAIC Blank for Hospital, Medical, and Dental Service or Indemnity Corporations and the NAIC Blank for Health Maintenance Organizations. ASOP No. 28, which replaced FRR 10 entirely, was based on the current versions of the above two Blanks, and it provided more detailed and comprehensive guidance than that provided in FRR 10.

The type of asset adequacy analysis most widely used by actuaries is multi-scenario cash flow testing. To guide actuaries choosing to use this technique, the ASB adopted ASOP No. 7, *Performing Cash Flow Testing for Insurers*, in October 1988. ASOP No. 7 was revised in July 1991 and again in June 2002.

In July 1990, the ASB adopted ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, to provide guidance in determining whether to do cash flow testing in forming a professional opinion or recommendation. ASOP No. 14 was repealed in September 2001 after the ASB determined that relevant portions were incorporated in the 2001 revisions of ASOP No. 7 and ASOP No. 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*.

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To guide actuaries in the development of incurred health claim liabilities, the Interim Actuarial Standards Board approved an actuarial standard of practice, then titled *Incurred Health Claim Liabilities*, in April 1988, which was subsequently reformatted and adopted by the ASB as ASOP No. 5 in January 1991 and revised in December 2000.

To guide actuaries in several important areas requiring special consideration for health maintenance organizations (HMOs) and other managed-care health plans in several areas, including establishing actuarial reserves relating to the transfer of risk to providers and the financial condition of capitated providers, the ASB adopted ASOP No. 16, *Actuarial Practice Concerning Health Maintenance Organizations and Other Managed-Care Health Plans*, in July 1990. This ASOP was repealed in April 2007 after the ASB determined that it provided information redundant with other ASOPs; the document outlining its repeal refers the reader to other relevant ASOPs.

To guide actuaries in the development of health and disability liabilities other than liabilities for incurred claims, the ASB adopted ASOP No. 42, then titled *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*, in March 2004. These include contract reserves, premium deficiency reserves, provider-related liabilities, claim adjustment expense liabilities, and other liabilities of insurance entities, insured or noninsured risk-assuming entities, managed care entities, health care providers, government-sponsored health benefit plans, or risk contracts. In March 2018, the ASB adopted a revision of ASOP No. 42, now titled *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*, with an expanded scope including actuarial assets and liabilities.

Current Practices

When issuing or reviewing statements of actuarial opinion related to health insurance assets and liabilities, actuaries often refer to other publicly available sources of information. The NAIC publishes Health Annual Statement instructions, which are updated annually and provide specific guidance to the actuary. Additionally, numerous educational papers that are relevant to the topic of reserves, assets, and liabilities and their evaluation, including those published by the Society of Actuaries, are in the public domain.

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Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities* ASOP was issued in June 2020 with a comment deadline of November 13, 2020. Three comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 28 Task Force carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the ASOP No. 28 Task Force and the ASB Health Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 28 Task Force, the ASB Health Committee, and the ASB. Also, the section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final ASOP.

GENERAL COMMENTS	
Comments	One commentator recommended adding specific disclosures to section 4 that a reviewing actuary would be required to include in communicating the results of their review.
Response	The reviewers note that section 1.2 indicates that this standard is applicable to the reviewing actuary to the extent practicable. Therefore, the reviewers believe that the existing requirements included in section 4 apply to reviewing actuaries to the extent practicable. The reviewers also believe there is no need to develop additional disclosure requirements specific to reviewing actuaries and made no change in response to this comment.
Comment	One commentator said the focus of section 3 is entirely on actuaries preparing statements of opinion and does not refer to the reviewing actuary.
Response	The reviewers note that section 1.2 indicates that the reviewing actuary should use the guidance in this standard to the extent practicable. Therefore, the reviewers removed all reference to the reviewing actuary in section 3 to eliminate confusion.

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Comment	One commentator suggested that the ASOP provide clearer guidance to the actuary when considering accounting standards in the evaluation of assets and liabilities and on how to address deviations from the standard when there is a conflict with accounting standards.
Response	The reviewers disagree that clearer guidance is necessary, and note that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , and ASOP No. 41, <i>Actuarial Communications</i> , address situations involving deviation from standards. Therefore, the reviewers made no change in response to this comment.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested replacing “governs” with “takes precedence” in this section.
Response	The reviewers note the language is consistent with ASOPs currently being issued and made no change in response to this comment.
SECTION 2. DEFINITIONS	
Section 2.9, Health Insurance Asset (Asset), and Section 2.10, Health Insurance Liability (Liability)	
Comment	One commentator suggested that the use of the term “actuarial consideration” in sections 2.9 and 2.10 is vague and should be defined in another ASOP such as ASOP No. 1. In addition, the commentator suggested that the use of examples is not necessary and suggested they be removed.
Response	The reviewers agree that the term “actuarial consideration” is unnecessary and modified the definitions accordingly. The reviewers disagree that the examples should be removed and added “may” before “include” to remove the definitive nature of the list.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.3, Basis of Assets and Liabilities	
Comment	One commentator suggested a definition of “basis” be included at the beginning of the section.
Response	The reviewers agree that the term “basis” should be clarified and revised the language in section 3.3 to provide clearer guidance. The reviewers note that the list of items in section 3.3(a) through 3.3(e) helps clarify what is included in a basis.
Comment	One commentator suggested changing “document what the actuary assumed” to “identify what the actuary assumed.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested that section 3.3(e) should begin with “whether there is...”.
Response	The reviewers agree and modified the language accordingly.
Comment	One commentator believes that the term “best estimate” implies statutory conservatism (i.e., good and sufficient under moderately adverse conditions) based on interpretation of Statement of Statutory Accounting Principles No. 55.
Response	The reviewers agree that the term “best estimate” is ambiguous and removed the sentence. The reviewers made additional changes to this section to clarify guidance.
Section 3.4, Scope of the Analysis Underlying the Statement of Actuarial Opinion	
Comment	One commentator noted that the use of the term “individual” in section 3.4(b) could result in the actuary being required to include any item that is theoretically possible for the statement line, even if a certain reserve item is not applicable to the company or may require the actuary to identify every element of a reserve category (for example, every element in an unpaid claim liability calculation).
Response	The reviewers agree that use of the word “individual” could be confusing and modified the language in section 3.4(b) in response to this comment.

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Section 3.5, Materiality	
Comment	One commentator suggested that section 3.5 should also address materiality in terms of the level of conservatism in the assets and liabilities, whether implicit or explicit. The importance of a particular balance sheet item, and especially the potential misstatement of such an item, should be considered in terms of whether it is large enough to impair the required conservatism.
Response	The reviewers disagree and made no change in response to this comment. The reviewers note that the existing general guidance in section 3.6 and the last paragraph of section 3.11 address the evaluation of conservatism.
Section 3.6, Asset and Liability Evaluation	
Comment	One commentator suggested that the current wording—in particular, the word “evaluate”—requires some specific calculation of the aggregate level of conservatism in each assumption.
Response	The reviewers did not intend to require a specific calculation and deleted the last sentence of the first paragraph to avoid ambiguity.
Comment	One commentator suggested that the reference to “best estimate basis” should be removed from the last sentence in the sixth paragraph of section 3.6 and end with “...are developed without conservatism.”
Response	The reviewers agree and made the change.
Comment	One commentator felt the ASOP should not pre-suppose that all of the items listed in this section always stem from “complex calculations.”
Response	The reviewers agree and modified the language in response to this comment.
Comment	One commentator felt the requirement to “document” is unnecessary to include in section 3.6 since it is explicitly included in section 4.1(i).
Response	The reviewers believe that a documentation requirement in section 3 is appropriate and made no change in response to this comment.
Section 3.11, Statements of Actuarial Opinion	
Comment	One commentator suggested that changing the nomenclature of the types of opinions was unnecessary.
Response	The reviewers note that the standard applies to statements other than NAIC annual statements. Therefore, the reviewers added clarifying language in section 1.2, Scope, but made no change to the language in section 3.11.
Comment	One commentator felt that the ASOP was not clear regarding whether excessive conservatism would affect the type of opinion issued and suggested the language be clarified.
Response	The reviewers disagree and made no change in response to this comment. The reviewers believe “outside a reasonable range” addresses the commentator’s concern.
Comment	One commentator suggested that the language in section 3.11 that refers to the “good and sufficient” standard should refer only to liabilities and not to assets because the prescribed wording of an NAIC blank refers to the “good and sufficient standard” with respect to “unpaid claims and other liabilities.”
Response	The reviewers disagree and made no change in response to this comment.

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SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	Two commentators suggested clarifying which disclosures should be included in the opinion and accompanying actuarial memorandum.
Response	The reviewers revised the language in response to these comments and removed references to individual disclosures.
Comment	One commentator noted the disclosures in section 4.1(e) are more appropriate to include in the actuarial memorandum.
Response	The reviewers revised language in section 4.1 to allow more flexibility related to what is included in the actuarial memorandum versus in the opinion.
Comment	One commentator noted that a range is not required for every asset or liability and suggested that section 4.1(g) be revised to clarify the requirement.
Response	The reviewers disagree that section 4.1(g) requires the actuary to develop a range and made no change in response to this comment.
Comment	One commentator suggested that sections 4.1(d) and 4.1(j) could be merged as both require a description of the “methods, assumptions, and procedures used.”
Response	The reviewers agree and combined sections 4.1(d) and (j) in response to this comment.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 29**

**Expense Provisions in
Property/Casualty Insurance Ratemaking**

**Developed by the
Subcommittee on Ratemaking of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
July 1997**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 147)

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August 1997

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Expense Provisions in Property/Casualty Insurance Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 29

This booklet contains the final version of actuarial standard of practice (ASOP) No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*.

Background

This standard was developed by the Subcommittee on Ratemaking of the ASB's Casualty Committee. The Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* identifies and describes principles applicable to the determination and review of property/casualty insurance rates. These principles are limited to that portion of the ratemaking process involving the estimation of costs associated with the transfer of risk. For most lines of business, the expense component is a significant portion of the rate. For some lines of business, the expense component can actually exceed the loss component. For this reason, it is necessary to have a standard of practice to provide guidance to actuaries in the determination of a proper expense component.

Exposure Draft

This standard was exposed for review in October 1994, with a comment deadline of March 15, 1995. Thirty-one comment letters were received. The Subcommittee on Ratemaking reviewed all the comments carefully, and many of the suggestions were incorporated into the final standard. In particular, the subcommittee expanded the discussions concerning (1) residual market and statutory assessment provisions, (2) the provision for reinsurance, and (3) policyholder dividends. (For a detailed discussion of the issues raised in the comment letters, and the subcommittee's responses to such, please see appendix 2.)

Format Changes

A number of format changes have also been made since publication of the exposure draft. The ASB voted in May 1996 to change the format of all future actuarial standards of practice. Thus, sections 3 and 4 now form an appendix titled, Background and Current Practices. (Appendix 1 of this standard contains sections 3 and 4 of the exposure draft.) Further, sections 5 and 6 of the exposure draft have now been renumbered as sections 3 and 4. The "new" sections 3 and 4,

along with sections 1 and 2, now form the actual standard of practice. The heading *Preamble*, which used to apply to the first four sections of the standard, has been deleted. The board made these format changes to help the reader distinguish between a standard's substantive requirements and language intended for general information.

The Subcommittee on Ratemaking and the Casualty Committee thank everyone who provided input during the exposure process. The comments were helpful in making revisions. The Casualty Committee also thanks the following former subcommittee members, who made significant contributions to this work: Daniel J. Flaherty, Gary Grant, and Robert Lindquist. The ASB voted in July 1997 to adopt the final standard.

Subcommittee on Ratemaking of the Casualty Committee

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Casualty Committee of the ASB

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ACTUARIAL STANDARD OF PRACTICE NO. 29

EXPENSE PROVISIONS IN PROPERTY/CASUALTY INSURANCE RATEMAKING

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this standard of practice is to provide guidance to actuaries in estimating costs for property/casualty insurance ratemaking other than (1) incurred losses, (2) the provision for profit and contingencies, (3) investment expenses, and (4) federal and foreign income taxes.
- 1.2 **Scope**—This standard of practice applies to all property/casualty insurance coverages. This standard also applies to property/casualty risk financing systems, such as self-insurance, that provide similar coverages. References in the standard to *risk transfer* should be interpreted to include risk financing systems that provide for risk retention in lieu of risk transfer.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective with respect to work performed after December 1, 1997.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Commission and Brokerage Fees**—Compensation to agents and brokers.
- 2.2 **Expense Limitations**—Legislative or regulatory rules that disallow or limit certain categories of expenses in determining rates.

- 2.3 **General Administrative Expenses**—All operational and administrative expenses (other than investment expenses) not specifically defined elsewhere in this section.
- 2.4 **Loss Adjustment Expenses** (LAE)—All expenses incurred in investigating and settling claims.
- 2.5 **Other Acquisition Expenses**—All costs, other than commission and brokerage fees, associated with the acquisition of business.
- 2.6 **Policyholder Dividends**—Nonguaranteed returns of premium or distributions of surplus.
- 2.7 **Premium-Related Expenses**—Those expenses that vary in direct proportion to premium, e.g., premium taxes. These expenses are sometimes referred to as *variable expenses*.
- 2.8 **Rate**—An estimate of the expected value of future costs.
- 2.9 **Residual Market Provision**—A provision for the entity's costs that represents its share of residual market profits or losses.
- 2.10 **Statutory Assessment Provision**—A provision for the entity's costs stemming from any mandated assessment.
- 2.11 **Taxes, Licenses, and Fees**—All taxes and miscellaneous fees except federal and foreign income taxes.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Categorizing Expenses**—The actuary should be familiar with the pertinent requirements for defining expenses, such as those prescribed in the *Instructions for Uniform Classification of Expenses*, published by the National Association of Insurance Commissioners (NAIC), or Regulation 30 of the New York State Insurance Department. The actuary should also be familiar with the entity's own methods of classifying and assigning expenses.
- 3.2 **Determining Expense Provisions**—The actuary should determine the provisions for loss adjustment expenses; commission and brokerage fees; other acquisition expenses; general administrative expenses; and taxes, licenses, and fees that are appropriate for the policies to be written or coverages provided during the time the rates are expected to be in effect. In addition, where appropriate, the actuary should consider subdividing the expense categories. Expense provisions should reflect the conditions expected during the time these policies or coverages are expected to be in effect and should include all expenses expected to be incurred in connection with the transfer of risk.

For expenses other than premium-related expenses, the actuary should consider estimating these expenses on a basis that is not directly proportional to premium, such as

per policy, per coverage, a percentage of claim losses, or per unit of exposure. Studies or actuarial judgment may support such estimates.

- 3.3 **Start-Up Costs**—The actuary may amortize start-up or development costs using an appropriate amortization period.
- 3.4 **Expense Trending**—In determining the future expense components of the rate, the actuary should be guided by Actuarial Standard of Practice (ASOP) No. 13, *Trending Procedures in Property/Casualty Insurance Ratemaking*.
- 3.5 **Policyholder Dividends**—The *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* of the Casualty Actuarial Society (CAS) classifies policyholder dividends as an expense to operations. When the actuary determines that policyholder dividends are a reasonably expected expense and are associated with the risk transfer, the actuary may include a provision in the rate for the expected amount of policyholder dividends. In making this determination, the actuary should consider the following: the company's dividend payment history, its current dividend policy or practice, whether dividends are related to loss experience, the capitalization of the company, and other considerations affecting the payment of dividends.
- 3.6 **Residual Market and Statutory Assessment Provisions**—The actuary should include a provision in the rate for any residual market costs or statutory assessments expected to occur during the period of time the rates are expected to be in effect. If these costs are assessed retrospectively, it may be appropriate to include a provision to recover these costs to the extent they were not included in previous rates.
- 3.7 **Provision for Reinsurance**—The actuary may elect whether to include the cost of reinsurance as an expense provision. If a provision for reinsurance is included, the actuary should consider the amount to be paid to the reinsurer; ceding commissions or allowances; expected reinsurance recoveries; and other relevant information specifically relating to cost, such as a retrospective profit-sharing agreement and reinstatement premiums between the reinsured and the reinsurer.

Section 4. Communications and Disclosures

- 4.1 **Conflict with Law or Regulation**—The rate filed with a regulator may differ from an actuarially determined rate because of expense limitations. If a law or regulation conflicts with the provisions of this standard, the actuary should develop a rate in accordance with the law or regulation, and disclose any material difference between the rate so developed and the actuarially determined rate to the client or employer.
- 4.2 **Documentation**—The actuary should be guided by the provisions of ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*.

4.3 **Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:

- a. in addition to the disclosure covered in section 4.1, the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Inflation—Prior to the relatively high inflation of the 1970s, a predominant ratemaking technique involved including expenses, other than loss adjustment expenses, as a percentage of premium. In doing so, it was assumed that the expense portion of the rate was subject to the same trend (usually very low) to which the loss and loss adjustment expense portions were subjected. However, higher levels of inflation had a rather significant impact on the expected change in the various components of the rate. By the 1970s, the assumption that the trend in expenses would approximate the trend in losses was being questioned. Although the actuarially determined loss trend may have been applied to the loss and loss adjustment expenses as usual, a separate analysis and trend may have been necessary to properly reflect the anticipated change in certain other expenses.

Expense Flattening—Expense flattening techniques assign expenses to policies or other units of exposure rather than in proportion to premium or losses. Thus, expense flattening is a procedure sometimes used to determine that portion of the rate that does not vary in direct proportion to premium or losses.

Expense Trending—Expense trending reflects how changes over time affect expenses. Over the years, separate trending of expenses has become a more common ratemaking technique. However, including expenses as a proportion of premium is still used.

Actuarial Literature—Although the property/casualty actuarial literature is relatively sparse on the topic of expense provisions in ratemaking, techniques for separately trending losses and expenses and alternatives to premium-related expense provisions have been included in such literature. Also included are discussions about the inappropriateness, in some cases, of assuming proportional expenses for administrative ease when, in fact, some expense categories do not vary in direct proportion to premium.

Regulation—Beginning in the late 1970s, some regulators have applied expense limitations in either limiting or disallowing certain expenses and in requiring expense flattening.

Current Practices

Categories—Expenses other than investment expenses are generally divided into five broad categories to determine the expense component of the rate. These expenses are (1) loss adjustment expenses, (2) commission and brokerage fees, (3) other acquisition expenses, (4) general administrative expenses, and (5) taxes, licenses, and fees. Studies may be conducted to determine which expenses vary in direct proportion to premium, losses, number of policies, or other units of exposure, and which expenses may be independent.

Loss Adjustment Expenses—Loss adjustment expenses are generally of two types: allocated and unallocated. Allocated loss adjustment expenses (ALAE) are sometimes combined with and, thus, treated the same as, incurred losses (IL). ALAE are combined with unallocated loss adjustment expenses (ULAE) for some lines of business. ULAE may be expressed as a function of IL plus ALAE, but may also be expressed as a function of premium. For lines of business in which all loss adjustment expenses are combined, the loss adjustment expenses are generally expressed as a function of either IL or premium.

Commissions and Premium Taxes—Commissions and premium taxes are typically paid as a percentage of direct written premium. Such expenses are generally treated as premium-related expenses.

General Administrative Expenses and Other Acquisition Expenses—General administrative expenses and other acquisition expenses may be expressed as a function of premium; or may be partially related to premium, partially related to the number of policies, and partially related to the number of exposures.

Current Information—Historical expenses are generally analyzed in light of current relevant information to determine whether they will be representative of future costs.

Budgeted versus Historical Expenses—Because of the prospective nature of ratemaking, certain expenses, such as commissions, are generally based on budgets rather than determined from historical data.

Expense Trending—Historical expenses may be adjusted to reflect changes over time.

Residual Market and Statutory Assessment Provisions—Residual market costs and statutory assessments are often included as expenses. For those classes of business written in the voluntary market that caused the insurer to receive a share of the residual market, the residual market provision may be separately identified or embedded in the rate.

Appendix 2

Comments on the Exposure Draft and Subcommittee Responses

The proposed standard of practice was approved for release as an exposure draft in October 1994, with a comment deadline of March 15, 1995. Thirty-one comment letters were received and reviewed by the Subcommittee on Ratemaking of the ASB's Casualty Committee. Summarized below are the substantive issues raised and questions contained in the comment letters, printed in lightface. The subcommittee's responses to those issues appear in **boldface**.

Note also that, as mentioned in the transmittal memorandum to this standard of practice (see page vi), the ASB adopted on May 1, 1996, a new format for all actuarial standards of practice. Thus, the section numbers below refer to section numbers in the exposure draft, unless otherwise noted (some section numbers have remained the same).

Section 1. Purpose, Scope, and Effective Date

Section 1.1, Purpose—Several comments were received asking for clarification of the issues covered by the standard. **The subcommittee added the phrase *for property/casualty insurance ratemaking* to clarify that the standard is limited to ratemaking.** Further, the section was revised to note that the subject of federal and foreign income taxes is clearly *excluded* by the standard. The subject of investment expenses was also specifically excluded since the subcommittee agreed that the subject should not be considered in this standard. One commentator questioned whether allocated loss adjustment expenses were included in the standard. **The subcommittee revised the section to make it clear that all loss adjustment expenses are included in this standard.**

Section 1.2, Scope—A few commentators noted that this section is ambiguous in its use of examples. **The subcommittee modified the text to clearly note that the standard applies to all property/casualty coverages.**

Section 2. Definitions

Section 2.1, Allocated Loss Adjustment Expenses—**This definition was deleted since it is not used in the standard.**

Section 2.4, General Administrative Expenses (now section 2.3)—Several comments were received regarding reinsurance expenses. **The subcommittee added a new section, Provision for Reinsurance (see section 3.7), to discuss the treatment of reinsurance expenses. No changes were made to the definition of general administrative expenses.**

Section 2.5, Guaranty Fund Assessments (now section 2.10 and titled, Statutory Assessment Provision)—**The subcommittee developed a broader definition that refers to all statutory assessments in order to reflect guaranty fund assessments, and emerging statutory insurance and reinsurance mechanisms, such as the Florida Hurricane Catastrophe Fund, the Florida Windstorm Underwriting Association, and the California Earthquake**

Authority, as well as various administrative and special fund expenses for which entities are assessed. The subcommittee also replaced the word *insurer* with *entity* to further broaden the application.

Section 2.8, Policyholder Dividends (now section 2.6)—One comment letter noted that this was a weak definition. **Although the definition was slightly modified, the subcommittee believes that the revised definition is the most descriptive and definitive one available. The subcommittee deleted the phrase *charged to operations* at the end of the definition and added the phrase *or distributions of surplus*.**

Section 2.9, Rate (now section 2.8)—**No change was made. This definition is the same as the one found in the CAS Statement of Principles Regarding Property and Casualty Insurance Ratemaking.**

Section 2.10, Residual Market Provision (now section 2.9)—**Per comments received, the entire second sentence of the section was moved to section 4.9 of the exposure draft, which can now be found in appendix 1 under the title, Residual Market and Statutory Assessment Provisions.**

Section 2.11, Taxes, Licenses, and Fees—**Based on comments received and on an analysis of the insurance expense exhibit breakout, the subcommittee inserted the words *federal and foreign* before *income taxes* to make clear that state income, municipal, police department, fire department, etc., premium taxes should be considered.**

Section 2.12, Unallocated Loss Adjustment Expenses—Some commentators noted that since some companies contract claim handling as a percentage of each claim cost, some types of claim costs could be classified as “allocated” for one company and “unallocated” for another. **This definition was deleted since it is not used in the standard.**

Section 2.13, Variable Expenses (now section 2.7 and titled Premium-Related Expenses)—One commentator suggested that this section be titled, Premium Variable Expenses. **The subcommittee agreed in concept and changed the title to, Premium-Related Expenses.**

Other commentators suggested that the standard define *nonvariable expenses*, since the term is used in section 4.8 (this section can now be found in appendix 1, Current Practices, with the title, Expense Trending) and section 5.4, Measurement Base. **The subcommittee deleted use of this term. Thus, no definition is necessary. Expenses that are not related to premiums are treated in the second paragraph of section 3.2, Determining Expense Provisions, in this standard.**

Section 3. Background and Historical Issues (Now in Appendix 1 under Background)

Section 3.1, Inflation and Price Controls (this section can now be found in appendix 1 under the title, Inflation)—It was noted that *price controls* are not mentioned elsewhere in the section. **This phrase was deleted. The subcommittee also modified the wording in the last sentence of the paragraph to make the application of the loss trend less restrictive.**

Section 3.2, Expense Flattening (this section can now be found in appendix 1)—It was suggested that the word *policies* be expanded to *policies or other units of exposure*. **The subcommittee agreed and made the modification. In addition, the wording in the last sentence was changed to make the definition of *expense flattening* more explicit.**

Section 3.3, Expense Trending (this section can now be found in appendix 1 under Background)—It was noted that the phrase *expense trending* does not need to be italicized. **The subcommittee deleted the italics and replaced *measures* with *reflects*, since *expense trending* is not a true measure of changes.**

Section 3.4, Actuarial Literature (this section can now be found in appendix 1)—**In the first sentence, the subcommittee replaced the word *expenses* with the phrase *expense provisions in ratemaking* to make it consistent with the subject of the standard of practice. In the last sentence, the wording was modified to be consistent with the section, Expense Flattening.** Section 3.5, Regulation (this section can now be found in appendix 1)—It was suggested that the second sentence (*These expense limitations should be taken into account when establishing the premium rate filed with the regulator.*) reflects procedure rather than background. **The subcommittee deleted this sentence from the section, and modified the wording in section 4.1 of the standard to reflect this change.**

Section 4. Current Practices and Alternatives (Now in Appendix 1 under Current Practices)

Section 4.1, Categories (this section can now be found in appendix 1)—Suggestions included rearranging this section to remove the reference to specific loss adjustment expenses and inserting this reference into section 4.2. It was also suggested that the draft may be too limiting regarding current practice. **The subcommittee moved a portion of this section to the section directly below it (i.e., the old section 4.2, Loss Adjustment Expenses), and rewrote the remaining text to broaden the scope of current practice. Also, the word *special*, describing the studies that could be conducted, was deleted.**

Section 4.2, Loss Adjustment Expenses (this section can now be found in appendix 1)—It was suggested that the third and fourth sentences were inconsistent. **The subcommittee revised the third and fourth sentences of this section to clarify that unallocated expenses may be expressed as a function of premium.**

Section 4.3, Commissions and Premium Taxes (this section can now be found in appendix 1)—A concern was expressed that this section did not mention “truly variable commissions, e.g., ones that include profit-sharing based on loss ratios.” In addition, minor editorial changes were recommended. **The subcommittee is satisfied that this section is broad enough to allow the actuary to work with variable commissions. The editorial suggestions were adopted.**

Section 4.4, General Administrative Expenses and Other Acquisition Expenses (this section can now be found in appendix 1)—One commentator suggested that this section is inconsistent with sections 4.1 and 5.1 of the exposure draft. In addition, minor editorial suggestions were offered.

The subcommittee does not agree that an inconsistency exists among the sections, but it did incorporate the suggested editorial changes.

Section 4.5, Specific Jurisdiction versus Nationwide—Minor editorial changes were suggested. **After further consideration, the subcommittee concluded that this section was not necessary and deleted it.**

Section 4.8, Nonvariable Expenses (this section can now be found in appendix 1, Current Practices, with the title, Expense Trending)—Concern was expressed that this section restricts expense trending to only nonvariable expenses. It was also suggested that this section be broadened to include a discussion of the prospective treatment of expenses. **The subcommittee renamed this section Expense Trending, modifying the text to acknowledge that expenses may need to be adjusted to reflect changes over time.**

Section 4.9, Residual Market Provisions and Guaranty Fund Assessments (this section can now be found in appendix 1 with the title, Residual Market and Statutory Assessment Provisions)—A few comment letters requested making this section more general by removing references to *guaranty funds* and removing the reference to *state-specific residual market costs*. **The phrase guaranty fund was replaced with the term statutory in the title, and the phrase state-specific was eliminated from the section. The subcommittee also added language to identify an appropriate treatment of a residual market provision.**

Section 5. Analysis of Issues and Recommended Practices (Now Section 3)

Section 5.1, Categorizing Expenses (now section 3.1)—Concerns were expressed that requiring the actuary to be familiar with the *Instructions for Uniform Classification of Expenses* and with the entity's own methods of classifying expenses is too onerous. **This information (i.e., that contained in the NAIC publication and the entity's own methods) is important to the selection of an appropriate expense methodology. The section was left unchanged.** It was also suggested that the National Council on Compensation Insurance statistical plan be added to the list of expense definitions. **The subcommittee believes that the requirement to be “familiar with the entity’s own methods” covers this issue.**

Section 5.2, Determining Expense Components (now section 3.2 and titled Determining Expense Provisions)—Several concerns were expressed about the discussion of ULAE and ALAE. Also, several comments requested that residual market costs be discussed in a separate section. **The discussion of ULAE and ALAE was deleted. Also, the subcommittee added a new section, Residual Market and Statutory Assessment Provisions (see section 3.6), and a new paragraph providing direction for handling expenses that do not vary directly with premium. This new paragraph replaces section 5.4 of the exposure draft.**

Section 5.3, Start-Up Costs (now section 3.3)—Comments were received that start-up costs should be more precisely defined. **The subcommittee believes that the determination of which costs are start-up costs and which are not should be made by the actuary in each unique situation. The subcommittee changed the language to include development costs, and made**

other editorial changes, but did not think it appropriate to more explicitly define these costs.

Section 5.4, Measurement Base—Several comment letters stated that the term *nonvariable expenses* needs to be defined. It was also suggested that the reference to *premium discounts or expense constants* be deleted. **As noted earlier regarding comments on section 5.2, the subcommittee deleted this section and moved the discussion of expenses that do not vary directly with premium to the second paragraph of section 3.2 of this standard.**

Section 5.5, Expense Trending (now section 3.4)—It was suggested that this section specifically identify the pertinent sections of ASOP No. 13, so that actuaries would not need to review the other standard of practice. **ASOP No. 13, *Trending Procedures in Property/Casualty Insurance Ratemaking*, should be reviewed whenever an actuary is engaged in ratemaking. No changes were made to this section.**

Section 5.6, Policyholder Dividends (now section 3.5)—Concerns were expressed that this section is unclear as to when policyholder dividends are (or are not) associated with the transfer of risk. **The subcommittee rewrote this section for clarification and to provide additional guidance.**

Note, as well, that two new sections have been added: section 3.6, Residual Market and Statutory Assessment Provisions (see the comments above regarding section 5.2 of the exposure draft), and section 3.7, Provision for Reinsurance (see the comments above regarding section 2.4 of the exposure draft).

Section 6. Communications and Disclosure (Now Section 4)

Section 6.1, Conflict with Law or Regulation (now section 4.1)—It was suggested that the actuary should quantify the economic impact of any limitations or exclusions. It was also suggested that conflicts should be disclosed to the regulator, in addition to the client or employer. **The subcommittee revised this section to note that, if a law or regulation conflicts with the provisions of this standard, the actuary should develop a rate in accordance with the law or regulation, and disclose any material difference between the rate so developed and the actuarially determined rate to the client or employer. In those situations where the regulator is neither a client nor an employer, it could be inappropriate for an actuary to disclose information directly to the regulator. Thus, the section was modified accordingly.**

Section 6.2, Documentation—One comment letter suggested that this section should simply reference ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*. **The subcommittee made the suggested change.** The Subcommittee on Ratemaking of the Casualty Committee thanks everyone who took the time and made the effort to write comment letters. The input was helpful in developing the final standard.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 30**

Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking

**Developed by the
Task Force on Rate of Return of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
July 1997**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 148)

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August 1997

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 30

This booklet contains the final version of Actuarial Standard of Practice (ASOP) No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*.

First and Second Exposure Drafts

The first draft of this standard was exposed for review in October 1994, with a comment deadline of March 15, 1995. Thirty-one comment letters were received. The second draft of this standard was exposed for review in August 1996, with a comment deadline of December 2, 1996. Ten comment letters were received on the second exposure draft. (For a copy of either exposure draft, please contact the ASB office.) The Task Force on Rate of Return of the ASB's Casualty Committee reviewed and carefully considered all comments received on both exposure drafts. As was the case after the first exposure, the task force revised the second exposure draft after participating in many conference calls and listening to comments made during question-and-answer sessions held at various Casualty Actuarial Society (CAS) meetings.

Substantive Issues

Following the first exposure draft, the task force received a number of comment letters regarding the discussion of rates versus prices. Although several changes were made in the second exposure draft to more clearly indicate that the proposed standard intended only to address the evaluation of costs (i.e., rates), some of the commentators' letters on the second exposure draft still expressed confusion on this point. In response, the task force further revised several sections to make clear that the standard does not address considerations such as marketing goals, competition, and legal restrictions that may affect price.

In addition to the "rates versus prices" issue, several commentators questioned whether the cost of capital is truly equivalent for stock, mutual, and other insurance organizations. After extensive discussion, the task force changed the language of the standard to focus the practitioner on assessing the cost of capital as an opportunity cost and to recognize that all risk transfers have an opportunity cost. The task force also combined section 3.8 with section 3.2 to indicate that the cost of capital may differ for various capital providers due to their differing risk characteristics,

and that such differences play a role in assessing the cost of capital for a specific capital provider. (For a detailed discussion of the comments and the task force's responses to such, please see appendix 2 of this standard.)

The task force is grateful to the many individuals who contributed written comments or participated in the numerous discussions of the proposed standard at CAS meetings. The task force believes that the final standard benefitted significantly from this professional debate.

The ASB voted in July 1997 to adopt the final standard.

Task Force on Rate of Return of the Casualty Committee

Mark Whitman, Chairperson

David Appel	Claus S. Metzner
Robert A. Bailey	Michael J. Miller
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ACTUARIAL STANDARD OF PRACTICE NO. 30

TREATMENT OF PROFIT AND CONTINGENCY PROVISIONS AND THE COST OF CAPITAL IN PROPERTY/CASUALTY INSURANCE RATEMAKING

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—According to the *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* (hereafter the *Statement of Principles*) of the Casualty Actuarial Society, insurance rates should provide for the cost of capital through underwriting profit and contingency provisions. This standard of practice provides guidance to actuaries in estimating the cost of capital and evaluating underwriting profit and contingency provisions.
- 1.2 **Scope**—This standard of practice applies to all property/casualty insurance coverages. This standard also applies to property/casualty risk financing systems, such as self-insurance, that provide similar coverages. References in the standard to *risk transfer* should be interpreted to include risk financing systems that provide for risk retention in lieu of risk transfer. Further, as is true of the *Statement of Principles*, this standard is limited to defining a *rate* as the estimation of future *costs* and does not address other considerations that may affect a *price*, such as marketing goals, competition, and legal restrictions.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective with respect to work performed after December 1, 1997.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Capital**—The funds intended to assure payment of obligations from insurance contracts, over and above those funds backing the liabilities.
- 2.2 **Contingency Provision**—A provision for the expected differences, if any, between the estimated costs and the average actual costs, that cannot be eliminated by changes in other components of the ratemaking process.
- 2.3 **Cost of Capital**—The rate of return that capital could be expected to earn in alternative investments of equivalent risk; also known as *opportunity cost*.
- 2.4 **Insurance Cash Flows**—Funds from premiums and miscellaneous (non-investment) income from insurance operations, and payments for losses, expenses, and policyholder dividends. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.5 **Insurance Risk**—The extent to which the level or timing of actual insurance cash flows is likely to differ from expected insurance cash flows.
- 2.6 **Investment Income**—Proceeds (other than the return of principal) derived from the investment of assets, minus investment expenses. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.7 **Investment Income from Insurance Operations**—The income associated with the investment of insurance cash flows. (This is sometimes referred to as *investment income on policyholder-supplied funds*.)
- 2.8 **Investment Risk**—The extent to which the level or timing of actual investment proceeds is likely to differ from what is expected.
- 2.9 **Leverage**—A measure of the relative amount of risk to which capital is exposed, typically expressed as the ratio of an exposure measure (such as premium or liabilities) to the capital amount.
- 2.10 **Operating Profit**—The sum of underwriting profit, miscellaneous (non-investment) income from insurance operations, and investment income from insurance operations. Associated income taxes are recognized when the analysis is on a post-tax basis.
- 2.11 **Rate**—An estimate of the expected value of future costs.
- 2.12 **Total Return**—The sum of operating profit and investment income on capital, usually after income taxes, often expressed in percentage terms.
- 2.13 **Underwriting Expenses**—All expenses except losses, loss adjustment expenses, investment expenses, policyholder dividends, and income taxes.

- 2.14 Underwriting Profit—Premiums less losses, loss adjustment expenses, underwriting expenses, and policyholder dividends.
- 2.15 Underwriting Profit Provision—The provision for underwriting profit in the actuarially developed rate, typically expressed as a percentage of the rate.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Estimating the Cost of Capital and the Underwriting Profit Provision—Property/casualty insurance rates should provide for all expected costs, including an appropriate cost of capital associated with the specific risk transfer. This cost of capital can be provided for by estimating that cost and translating it into an underwriting profit provision, after taking leverage and investment income into account. Alternatively, the actuary may develop an underwriting profit provision and test that profit provision for consistency with the cost of capital. The actuary may use any appropriate method, as long as such method is consistent with the considerations in this standard.

For historical and practical reasons, this standard separately discusses the underwriting profit provision, investment income from insurance operations, and investment income on capital. The actuary should keep in mind that evaluation of whether the cost of capital is appropriately recognized does not necessarily require these distinctions.

- 3.2 Basis for Cost of Capital Estimates—In estimating the cost of capital, the actuary should consider the relationship between risk and return. The methods used for estimating the cost of capital should reflect the risks involved in the risk transfer under consideration. These risks may include insurance, investment, inflation, and regulatory risks, as well as diversification, debt structure, leverage, reinsurance, market structure, and other appropriate aspects of the social, economic, and legal environments.

Thus, the cost of capital is likely to vary from one insurer to another. The actuary should recognize that the capital which is needed to support any risk transfer has an opportunity cost regardless of the source of capital or the structure of the insurer.

- 3.3 Estimates of Future Costs—Since all components of a rate should be estimates of future costs relating to the risk transfer during the prospective period of time to which the rate applies, capital costs, investment income, income taxes, cash flows, and leverage factors used in calculating the profit provision should all be based on expected future values.

- 3.4 Parameters of the Risk Transfer—The actuary should recognize that the cost of capital associated with an individual risk transfer may vary, based on the specific parameters of the transfer. To the extent that deductibles, dividend or return of premium plans, reinsurance, etc., affect the risk of the insurer, the cost of capital and the amount of capital needed to support the transaction may be affected.

- 3.5 Investment Income—There are two elements of investment income that the actuary

should consider: investment income from insurance operations and investment income on capital.

The actuary should assess the investment risk, since the amount and cost of capital should reflect investment risk as well as the risk associated with the insurance cash flows. Investment risk addresses the cost of default, reinvestment risk, and other investment uncertainties. Such risks can result in a significantly different yield than the stated yield rate.

Any of several general approaches may be used by the actuary to estimate investment income, as long as the assumptions are reasonable and appropriate. The investment yield rates used should be appropriate for the cash flow patterns associated with the coverages under consideration. If historical balance sheet and cash flow data are used to project investment income, the data should be adjusted to represent future investment income from the associated coverages.

The actuary may use any of a number of methods for recognizing investment income from insurance operations. Two such approaches are as follows:

- a. Methods that estimate investment income based on projected insurance cash flows. The insurance cash flows are projected for each future period, and the expected investment yield rate appropriate for each future period is applied to the insurance cash flow for that period. The investment yield rates should be appropriate for the cash flow patterns associated with the coverages under consideration.
- b. Methods that apply an expected investment yield rate to assets representing the liabilities for losses, loss adjustment expenses, and unearned premium net of agents' balances and prepaid expenses. If historic liability-to-premium relationships are used, they should be adjusted to reflect expected future relationships between liabilities and premiums. The actuary should also consider, for example, the effects of growth, changes in expected loss or expense patterns, and the effect of the delayed receipt of investment income. The investment yield rate selected should represent the expected investment yield for the insurer during the period the rates are expected to be in effect.

3.6 Income Taxes—To the extent income taxes are not included in the expense provision, the actuary should use provisions for expected income taxes that are consistent with the earnings expected from the insurance transaction being evaluated.

3.7 Contingency Provision—The actuary should include a contingency provision if the assumptions used in the ratemaking process produce cost estimates that are not expected to equal average actual costs, and if this difference cannot be eliminated by changes in other components of the ratemaking process.

While the estimated costs are intended to equal the average actual costs over time, differences between the estimated and actual costs of the risk transfer are to be expected in any given year. If a difference persists, the difference should be reflected in the ratemaking calculations as a contingency provision. The contingency provision is not intended to measure the variability of results and, as such, is not expected to be earned as profit.

- 3.8 **Use of Different Bases**—The cost of capital can be expressed as a percentage of capital, a percentage of assets, a percentage of premium, or other appropriate base. The actuary may choose any such appropriate base. Actuaries may use different bases, which can be converted from one to another. Regardless of which base is used to reflect the cost of capital, the actuary should clearly identify the base used and should document the relevant assumptions.
- 3.9 **Accounting Rules for Comparing the Cost of Capital**—The accounting rules employed within any model should be internally consistent. When comparing one industry with another, the actuary should make any necessary adjustments so that costs of capital of industries with different accounting methods can be properly compared.

Section 4. Communications and Disclosures

- 4.1 **Conflict with Law or Regulation**—If a law or regulation conflicts with the provisions of this standard, the actuary should develop a rate in accordance with the law or regulation, and disclose any material difference between the rate so developed and the actuarially determined rate to the client or employer.
- 4.2 **Documentation**—The actuary should be guided by the provisions of ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*.
- 4.3 **Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:
- a. in addition to the disclosure covered in section 4.1, the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Historical Procedures—Until the 1970s, it was common practice to include in rate calculations a standard underwriting profit and contingency provision of 2.5% for workers compensation insurance and 5% for other property/casualty lines of insurance (6% for some property lines). These provisions did not explicitly reflect investment income, since there was general agreement at the time that these standard provisions implicitly reflected investment income and insurance risk in a reasonable fashion. However, economic and structural changes in the insurance industry over time began to lead to the explicit recognition of investment income in calculating insurance rates.

Historical Issues—A number of issues have historically accompanied the development and evaluation of the underwriting profit and contingency provisions: (1) how to measure risk and reflect it in the underwriting profit provision, (2) how or whether to measure any systematic variation from expected costs and reflect it in the contingency provision, (3) which accounting rules should be used to measure insurance returns and to compare them with returns in other industries, (4) how or whether to allocate investment income and capital, and (5) how to relate underwriting profit provisions in rates to the cost of capital.

Role of Capital—Capital plays several roles in an insurance transaction, including providing the initial investment in physical plant and equipment and providing working capital. However, the primary role is to assure payment of obligations from insurance contracts, over and above those funds backing the liabilities.

Capital has a value and its use entails a cost. The cost is the expected return the capital could earn in alternative investments of equivalent risk. Judicial decisions dealing with the cost of capital and profit provisions (see, e.g., *Federal Power Commission v. Hope Natural Gas*, 320 U.S. 591 (1944)) provide background and definitions for the determination of the cost of capital in a regulatory setting.

Role of the Underwriting Profit Provision—The underwriting profit provision, together with all other cost and revenue components as defined in section 2.12, provides the risk taker with an expected total return to cover the cost of capital.

Role of the Contingency Provision—A common assumption underlying property/casualty insurance ratemaking is that the expected costs included in the rate calculations will equal the actual costs over the long run. If not, and the expected difference cannot be explicitly attributed

to a specific component of the rate (and thereby eliminated), then this difference is incorporated in the ratemaking process by including a contingency provision.

Current Practices

A method commonly used to develop or test the underwriting profit provision in insurance rates is to estimate the cost of capital and translate that cost into an underwriting profit provision. Some methods currently used to estimate the cost of capital, and financial models to relate that cost to the underwriting profit provision, are described below.

Underwriting profit provisions can also be developed using models that do not directly relate the cost of capital to the underwriting profit provision. Some of these models are also described below.

Inclusion of a particular model in this appendix should not be interpreted as an endorsement, but rather a recognition that such a model is used. Some applications of these models may not be consistent with section 3 of this standard.

Estimating the Cost of Capital—Several techniques are used to estimate the cost of capital. These include, but are not limited to, the following:

1. Comparable Earnings Model—The comparable earnings model is used to analyze historical returns on equity for entities or industries of comparable risk. The cost of capital is related to the average rate of return over a historical period.
2. Discounted Cash Flow Model—One form of the discounted cash flow (DCF) model, the dividend discount model, is used to analyze the current prices and dividend levels of publicly traded securities that pay dividends. The cost of capital is calculated as the sum of the expected first-year dividend yield plus the expected annual growth rate in dividends.
3. Risk Premium Model—The risk premium model is used to analyze the spread in returns for investments of different risk. The cost of capital is estimated as the sum of the expected return on a reference investment plus a margin to reflect relative risk. One widely used form of risk premium analysis is known as the capital asset pricing model (CAPM), in which the reference security is a risk free Treasury security, and the risk margin is determined using a measure of risk known as *beta*, defined as the covariance of an investment's return with returns in capital markets as a whole.

Relating the Cost of Capital to the Underwriting Profit Provision—This section describes various models currently used regarding the relation of the cost of capital to the underwriting profit provision.

1. Models that directly develop an underwriting profit provision are as follows:

- a. Net Present Value Model—The net present value (NPV) model is used to discount the estimated net cash flow to the capital provider at a rate equal to the cost of capital. For the purpose of these calculations, *net cash flow* is defined as the residual amounts of cash that flow to and from the equity account, after all policy obligations are met. The net cash flow reflects the timing of each of the individual cash flows, including the commitment and release of capital in support of the insurance transaction. The internal rate of return (IRR) model, a specific application of the general NPV model, uses an iteration technique to calculate the rate(s) of return that will set the net present value of a risk transfer's cash inflows and outflows equal to zero.
 - b. Other Discounting Models—Other discounting models can be used to estimate the present value of the individual cash flows from the insurance transaction. The present value of the premium and miscellaneous (non-investment) income, before profit, is set equal to the present value of the associated losses, expenses, policyholder dividends, and income taxes. The present values are estimated using appropriate prospective investment yield rates. A margin can be added to the present value of the premium so that the margin plus the expected investment income on capital generate a post-tax return that, when divided by the required capital, equals the cost of capital.
 - c. Total Financial Needs Model—Total financial needs models are used to develop the underwriting profit provision such that the sum of underwriting profit, miscellaneous (non-investment) income, investment income from insurance operations, and investment income on capital, after income taxes, will equal the cost of capital. Each of these components is explicitly quantified.
2. Models that do not directly relate the cost of capital to the underwriting profit provision are as follows:
- a. State X Model—The State X model (originally appearing in some Insurance Services Office, Inc. rate filings as the *State X method*) is used to estimate the investment income from insurance operations. The method does not, in itself, allow for development of the total return or of a profit provision; it is used merely to develop one component of the total rate of return—the estimated investment income from insurance operations.
 - b. Risk Adjusted Net Present Value Model—The risk adjusted net present value (RANPV) model is used to estimate the risk adjusted present value of the insurance cash flows. Each of the flows is analyzed for its specific risk, and the otherwise attainable prospective investment yield rate is adjusted by the risk component prior to calculating the present value. Using the RANPV model, one calculates the premium directly, so that the risk adjusted present value of the premium and miscellaneous (non-investment) income equals the risk adjusted present value of the losses, expenses, policyholder dividends, and associated in-

come taxes. The expected underwriting profit in the premium can be derived from the RANPV model by summing all components using their undiscounted values.

- c. Growth Requirement Model—The growth requirement model is used to set the level of retained earnings based on the expected future growth rate of the entity or industry.
- d. Additional Models—Other models that do not directly relate the cost of capital to the underwriting profit provision include options pricing models, arbitrage pricing models, models based on ruin theory, models based on utility theory, and shareholder value models.

Developing and Evaluating a Contingency Provision—Contingency provisions have been developed in practice using methods that measure differences between expected and actual costs.

Appendix 2

Comments on the 1996 Second Exposure Draft and Task Force Responses

The second draft of this standard was exposed for review in August 1996, with a comment deadline of December 2, 1996. Ten comment letters were received and reviewed carefully by the Task Force on Rate of Return of the ASB's Casualty Committee. Summarized below are the significant issues and questions contained in the comment letters, printed in lightface. The task force's responses appear in **boldface**.

General Observations

Of the ten comment letters received on the second exposure draft, most of the comments were favorable. Even those commentators who provided suggestions for changes seemed pleased with the overall direction the task force took in developing the second exposure draft. Samples of such satisfaction were found in comments such as follows: "I think this is an example of the type of standards that the profession should be developing," "[t]his draft represents an overall improvement over the initial exposure draft," and "the [task force] has taken great pains in carefully defining many critical concepts that our standards omit today." Most of the suggestions for revising text were to further clarify concepts already present within the second exposure draft.

However, it was also evident from the comments that some confusion still exists surrounding the "rate versus price" issue. For example, one commentator believes that the standard should not limit actuarial practice in setting profit margins that are either explicit or implicit in actual prices in the marketplace. The commentator further raises potential legal issues were the actuarial profession to engage in limiting actuarial practice in this area. **The task force agrees with the commentator that the standard does not apply to final (market) prices— the standard is entirely focused on the evaluation of costs. In fact, the task force has consistently and consciously focused on costs (*not* on prices) in its deliberations in consideration of the legal environment and has obtained competent legal advice as appropriate.**

The commentator also questions whether a consensus on acceptable actuarial practice currently exists in this area. **The task force believes such consensus exists and is embodied in the standard. The current syllabus upon which actuarial examinations are based is one indicator that a consensus exists. The extensive presentations and discussions of the proposed standard at Casualty Actuarial Society (CAS) meetings and seminars is another indication that such a consensus exists.**

Section 1. Purpose, Scope, and Effective Date

Section 1.1, Purpose—One commentator thought that the use of the phrase *include the cost of capital* in the first sentence of this section implied that the *Statement of Principles Regarding*

Property and Casualty Insurance Ratemaking of the CAS requires that an explicit provision for the cost of capital be included in rates. **The task force revised the text by replacing *include* with *provide for* to more closely match its understanding of the *Statement of Principles*.**

Section 1.2, Scope—**The task force revised this section to more clearly distinguish between *rate* and *price*. In addition, the task force added language to clarify that the standard applies to property/casualty risk financing systems, such as self-insurance.**

Section 2. Definitions

Section 2.2, Contingency Provision—One commentator suggested clarifying the language in this section to note that, in addition to quantification, a contingency provision might be provided for in other ways. **The task force reworded the section, making it more consistent with section 3.7.** Another commentator questioned the definition's lack of consideration of the potential variance in results. **The task force did not expand the definition, since it believes that the profit provision more appropriately should reflect variance in results.**

Section 2.3, Cost of Capital—Two commentators suggested changes. One suggested inclusion of specific components in the definition; the second suggested that *cost of capital* be defined as the *cost of capital desired by the capital provider*. **The task force did not modify the definition, as section 3.2 references a number of influences on the cost of capital. The task force did, however, revise section 3.2 by including additional explanatory language and believes these revisions to section 3.2 address the concerns raised by the second commentator.**

Section 2.4, Insurance Cash Flows—One commentator suggested changing the title of this section to Net Insurance Cash Flows, while another suggested referencing the treatment of taxes directly rather than indirectly. **The task force modified the language to clarify that miscellaneous (non-investment) income is from insurance operations. The revised section 2.4 also presents the components of insurance cash flow as items in a list to avoid the appearance of a calculation and directly references the treatment of income taxes.**

Section 2.6, Investment Income—Two commentators suggested clarifying the language with respect to the treatment of income taxes. **The task force adopted the suggestions and also adopted consistent language in sections 2.4 and 2.10.**

Section 2.8, Investment Risk—Two commentators pointed out an inconsistency in the usage of the terms *proceeds* and *income* in other definitions. **The task force clarified the text by using the term *proceeds* consistently.**

Section 2.10, Operating Profit, and Section 2.13, Underwriting Profit (now sections 2.10, Operating Profit; 2.13, Underwriting Expenses; and 2.14, Underwriting Profit)—Three commentators questioned the usage of the terms included (or excluded) in these definitions. There also appeared to be some confusion as to which expense items were included in the term *expenses*. **After careful review and discussion of the comments, the task force made changes in these definitions and added a new section (2.13, Underwriting Expenses). The intent of**

the commentators was incorporated in the three definitions, and the task force believes the revisions achieve the clarity and consistency suggested. These definitions are consistent with the categories used in the underwriting and investment exhibit statement of income in the National Association of Insurers Commissioners (NAIC) annual statement blank for property and casualty insurers. Specifically, the definition of *underwriting profit* is consistent with the definition of *net underwriting gain (or loss)* from the NAIC statement blank.

Section 2.12, Total Return—One commentator suggested that the definition include some examples of commonly used bases of total return. **The task force did not make any changes, since it believes the definition is clear as stated.**

Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Estimating the Cost of Capital and the Underwriting Profit Provision—One commentator wanted to change the beginning of the third sentence of this section from *Similarly* to *Alternatively*. **The task force made the change.**

Section 3.2, Basis for Cost of Capital Estimates—One commentator suggested that in the second sentence, the phrase *business activity* be changed to *risk transfer*. **The task force made this change.** Another commentator suggested adding *currency* to the list of risks included and noted that the list could be construed as “limiting or as a checklist of specific requirements.” **The task force disagrees. Since the types of risk to consider are many and diverse, the task force believes that it is necessary to provide a reasonable set of examples. The language of the standard (i.e., *These risks may include*) clearly indicates that the list is not exhaustive.**

Another commentator suggested that the reference to the *Hope Natural Gas* case be placed in the background section, i.e., in appendix 1. **The task force agrees and moved the reference accordingly (see the section titled, Role of Capital).**

Note as well that a new paragraph was added to section 3.2 (see the discussion below regarding comments received on section 3.8).

Section 3.3, Estimates of Future Costs—Several commentators disagreed that capital costs should be based upon expected future values, since the cost is dependent on the risk or variability to which it is exposed. **The task force agrees that risk or variability is an element of capital costs. Risk or variability is appropriately considered in deriving the expected value; therefore, no change in the language used is necessary.**

Section 3.4, Risk Sharing (now titled Parameters of the Risk Transfer)—One commentator suggested that the title of this section should be changed, noting that insurance is a risk transfer device, and not a risk sharing device. This commentator also suggested alternative wording to clarify the roles of the two main parties to the insurance transaction: the insured and the insurer. **The task force agrees with the commentator and rewrote the section to indicate that the cost of capital may vary with the specific parameters of the risk transfer.**

Another commentator noted that deductibles, limits, etc., affect the *structure* of the risk transfer rather than the parties involved. **The task force agrees that these factors affect the structure of the risk transfer and believes that the revised language addresses this concern.**

Section 3.5, Investment Income—One commentator suggested a revised second sentence in paragraph two as follows: *Investment risk includes the estimated cost of default and reinvestment risk on the assets associated with the proposed transaction, since such costs can result in a significantly different yield than the stated yield rate.* **The task force agrees with the commentator and changed the text to be substantially similar to the suggested revision.**

This commentator also suggested revising paragraph (b) to add *retention of business* as a subject for the actuary's consideration. **The task force agrees that retention of business may be a consideration, but the standard is not intended to provide an exhaustive list of considerations. The phrase *for example* was added to clarify that the section does not provide a complete list.**

Section 3.6, Income Taxes—One commentator suggested adding the following sentence: *The income tax position of the risk assuming entity, such as tax loss carry forwards, and alternative minimum taxes, may also be relevant to accepting or rejecting the proposed risk transfer.* **The task force disagrees with this suggestion, because it believes this suggestion addresses considerations that are not relevant to the cash flows for the risks being transferred. Therefore, no change was made.**

Section 3.7, Contingency Provision—One commentator suggested adding a sentence which would state that the actuary need not explicitly identify the contingency provision separate from the profit provision, and that the contingency provision is not intended as a risk margin for catastrophic events. **The task force believes the definition of *contingency provision* makes it clear that it is *not* a risk margin for catastrophic events. The task force disagrees that a contingency provision can implicitly be combined with a profit provision, because the two provisions are distinctly different, both subject to explicit determination.**

Another commentator suggested that the use and meaning of a contingency provision was unclear and needed to be clarified in the standard. **The task force believes that, with the clarifying changes made to the second paragraph of this section, the standard adequately explains the use of the contingency provision as a correction factor when the ratemaking process has produced in the past, and is expected to produce in the future, cost estimates not equal to average actual costs.**

Section 3.8, Structure of Insurer—This section of the second exposure draft addressed the structure of the insurer, such as stock, mutual, etc. Several commentators expressed concern that the requirements of the capital providers should be taken into account when considering the cost of the insurance product, and that non-stock organizations might have different requirements than stock companies. One commentator specifically suggested making a greater distinction between the cost of capital and the desired return on capital. **The task force rewrote the text of this section to place greater emphasis on the economic concept of *opportunity cost*, which**

refers specifically to the value of capital in its next best alternative use. Under this definition, the proper cost of capital is the return that the capital could earn in an alternative investment of equivalent risk. The task force does not believe that this differs depending on the ownership structure (i.e., stock, mutual, or other) of the insurer per se. However, as discussed in section 3.4, the actuary's estimate of the cost of capital should reflect characteristics of the risk transfer that may arise due to ownership structure (such as, for example, the availability of policyholder dividends). Note, in addition, that the text of this section was moved to section 3.2 in order to enhance clarity.

One commentator who questioned section 3.8 also wished to add to the standard a new section, which would read as follows:

Several of the models used for estimating the underwriting profit provision also permit the actuary to rank potential risk transfer undertakings. An actuary should be prepared to rank the risk versus the reward (the total return, from underwriting and from investment income) for various scenarios involving the allocation of capital towards a certain line of insurance or a specific product.

The commentator's rationale for this suggestion is that "the actuary of the future may often be called upon to estimate not only the reward (the total return from allocating capital towards a certain line of insurance or a specific product), and not only the associated risk, but also to rank several risk/reward scenarios for a client or employer." **The task force agrees that an actuary can be asked to estimate and rank various risk/reward scenarios for a client or an employer. However, the task force thinks that while this is implicit in the role an actuary plays, the matter is beyond the scope of the standard.**

Appendix 1—Background and Current Practices

Role of the Underwriting Profit Provision—One commentator found the references to *all other cost and revenue components* too vague. **The task force agrees that the reference is not precise, but the next clause of the sentence refers to *total [rate of] return*, which is precisely defined in section 2.12. Hence, no change was made.**

Estimating the Cost of Capital—One commentator suggested adding a parenthetical phrase, *(generally a risk free investment)*, to the description of the risk premium model (in the second sentence of item (3), after the phrase, *reference investment*). **The task force disagrees with this change. In the typical (perhaps the most common) implementation of the risk premium method, the reference security is a long-term utility bond, which is not risk free. Thus, the second sentence was left unchanged. However, the task force did modify the next sentence as follows: *One widely used form of risk premium analysis is known as the capital asset pricing model (CAPM), in which the reference security is a risk free Treasury security, and the risk margin is determined....* This correctly identifies that in the CAPM variant of risk premium analysis, the reference security is risk free.**

Relating the Cost of Capital to the Underwriting Profit Provision—One commentator expressed concern about the use of the singular *rate* in the last sentence of the section that discusses the net present value model, and another suggested alternative wording for clarity, in the definition of the IRR model. **The task force changed *rate* to *rate(s)*, and adopted the proposed wording to note that the IRR calculates the rate(s) of return by setting the net present value of a risk transfer's cash inflows and outflows equal to zero.**

The task force thanks everyone who took the time and made the effort to write comment letters. The input was helpful in developing the final standard.



**Repeal of
Actuarial Standard
of Practice
No. 31**

**Documentation in Health
Benefit Plan Ratemaking**

**Developed by the
Health Committee of the
Actuarial Standards Board**

**Repealed by the
Actuarial Standards Board
June 2009**

(Doc. No. 115)

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June 2009

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Documentation in Health Benefit Plan Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Repeal of Actuarial Standard of Practice (ASOP) No. 31

ASOP No. 31, *Documentation in Health Benefit Plan Ratemaking*, has been repealed by the ASB.

Background

ASOP No. 31, *Documentation in Health Benefit Plan Ratemaking*, was effective in 1998 and relied heavily on Interpretative Opinion No. 3 of the *Guides and Interpretative Opinions as to Professional Conduct* of the American Academy of Actuaries.

In 2002, the ASB repealed Interpretative Opinion 3: Professional Communications of Actuaries when the Board adopted ASOP No. 41, *Actuarial Communications*, which supersedes the guidance of Interpretative Opinion No. 3. ASOP No. 41 is applicable to all areas of actuarial practice and provides guidance with respect to written, electronic, or oral communications.

The Health Committee of the ASB has reviewed ASOP No. 31 and compared its guidance to ASOP No. 41 and other ASOPs. The committee concluded that the guidance in ASOP No. 31 is addressed in ASOP No. 41 and other ASOPs.

Exposure Draft

The exposure draft of this repeal document was issued in September 2008 with a comment deadline of December 31, 2008. Four comment letters were received. For a summary of the substantive issues and the reviewers' responses, please see appendix 2.

The Actuarial Standards Board wishes to thank all who commented on the repeal.

Action

The ASB voted in June 2009 to repeal ASOP No.31.

ASOP No. 31 is repealed for any work performed after June 30, 2009.

Health Committee of the ASB

Paul R. Fleischacker, Chairperson	
Mike S. Abroe	John C. Lloyd
Robert G. Cosway	Cynthia S. Miller
James M. Guterman	Nancy F. Nelson

Actuarial Standards Board

Stephen G. Kellison, Chairperson	
Albert J. Beer	Robert G. Meilander
Alan D. Ford	James J. Murphy
Patrick J. Grannan	Godfrey Perrott
Thomas D. Levy	James F. Verlautz

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

Appendix 1

Note: This appendix is prepared for informational purposes only.

The Health Committee prepared the following grid, which identifies provisions of section 3 of ASOP No. 31 cross referenced against ASOP No. 41, *Actuarial Communications*, and other ASOPs to reflect where pertinent actuarial guidance already exists.

Section 3. Analysis of Issues and Recommended Practices		
Current Section		Cross Reference
3.1	Introduction	ASOP No. 41 (3.1, 3.3.3)
3.2	Extent of Documentation	ASOP No. 41 (3.3.3, 3.6)
3.3	Documentation Issues Related to Risk	ASOP No. 41 (3.3.3, 3.6)
3.3.1	Reinsurance	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.3.3); ASOP No. 8 (3.2.2(i)); ASOP No. 26 (3.4.1(b))
3.3.2	Operational Changes	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.2.1, 3.2.3); ASOP No. 8 (3.2.3)
3.3.3	External Influences	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.2.2, 3.2.5); ASOP No. 18 (3.3)
3.3.4	Risk Classification Plan	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.2.4); ASOP No. 12 (3.4); ASOP No. 26 (3.4.1)
3.3.5	Ratemaking Process and Exposure Distribution	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2-3.2.6, 3.2.9); ASOP No. 26 (3.4.1)
3.3.6	Experience Rating Process	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.4)
3.3.7	Investment Income	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.3.1 (d)); ASOP No. 8 (3.2.2(e)); ASOP No. 18 (3.2.6)
3.3.8	Risk Provision	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.3.1(c)); ASOP No. 18 (3.3)
3.3.9	Cost of Capital	ASOP No. 41 (3.3.3, 3.6)
3.4	Documentation Issues Related to Data	ASOP No. 41 (3.3.3, 3.6)
3.4.1	Experience Period	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.4)
3.4.2	Experience Data	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.3.1(b), 3.4); ASOP No. 8 (3.2.4); ASOP No. 18 (3.2.1)

3.4.3	Credibility	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.4); ASOP No. 18 (3.2.1); ASOP No. 25 (Section 3)
3.4.4	External Data	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.4); ASOP No. 18 (3.2.1)
3.5	Documentation Issues Related to Determination of Experience Period Costs	ASOP No. 41 (3.3.3, 3.6)
3.5.1	Exposure Units	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2-3.2.4)
3.5.2	Claim Administration Expense	ASOP No. 41 (3.3.3, 3.6)
3.5.3	Large Claims (Shock Loss Claims)	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.3.4)
3.5.4	Policy and Provider Contract Provisions	ASOP No. 41 (3.3.3, 3.6); ASOP No. 5 (3.2.1, 3.2.2, 3.3.1(a), 3.3.6); ASOP No. 8 (3.2.2, 3.2.4, 3.2.5); ASOP No. 18 (3.1, 3.2.1); ASOP No. 26 (3.4.1)
3.5.5	Mix of Business	ASOP No. 41 (3.3.3, 3.6)
3.6	Documentation Issues Related to Expenses	ASOP No. 41 (3.3.3, 3.6)
3.6.1	Categorization of Expenses	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2(d)); ASOP No. 18 (3.2.4)
3.6.2	Start-Up Costs	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2d); ASOP No. 18 (3.2.4)
3.7	Documentation Issues Related to Trending Procedures	ASOP No. 41 (3.3.3, 3.6)
3.7.1	Trend Measurement	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2, 3.2.4)
3.7.2	Claim Cost Trend Factors	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2, 3.2.4)
3.7.3	Other Trend Factors	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2, 3.2.4)
3.7.4	Trend Selection	ASOP No. 41 (3.3.3, 3.6); ASOP No. 8 (3.2.2, 3.2.4)

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the repeal of ASOP No. 31, *Documentation in Health Benefit Plan Ratemaking*, was issued to the membership in September 2008 with a comment deadline of December 31, 2008. Four comment letters were received. The ASB and Health Committee carefully considered all comments received. Summarized below are the significant issues and questions contained in the comments and responses to each. The term “reviewers” in appendix 2 includes the Health Committee and the ASB.

GENERAL COMMENTS	
Comment	<p>The four commentators generally shared the same concerns in that they believed ASOP No. 31 should not be repealed but updated instead as to not create a void in actuarial guidance relative to ratemaking. The following is a summary of each comment letter received:</p> <ul style="list-style-type: none">• Although ASOP No. 31 contains parts of other ASOPs that provide similar guidance, it is unique in that seven other ASOPs had to be referenced in comparison and, therefore, it should not be repealed. The commentator also noted that certain assumptions, such as credibility and trend, are referenced in ASOP No. 31, but not ASOP No. 41.• The repeal of ASOP No. 31 “proves” that the ASOP is unnecessary as five of the eight Health ASOPs and two of the six General ASOPs were referenced. However, given the importance of ratemaking, ASOP No. 31 should not be eliminated but rather updated, and perhaps the title should be changed to <i>Considerations in Health Benefit Plan Ratemaking</i>.• The current ASOP No. 31 is an excellent guide to the specific task of documenting the ratemaking process for health benefit plans and should not be repealed. The commentator believes it would be distracting and confusing to have to reference so many ASOPs whereas now all the requirements are contained in ASOP No. 31.• Although general guidance with regard to documentation of the health actuary’s work for ratemaking is likely addressed in other ASOPs, ASOP No. 31 is used by many health actuaries not only as documentation guidance but also as a valuable checklist of elements and aspects that should be considered and addressed in ratemaking for health benefit plans. Therefore, having such reference is especially important for actuaries working on heavily regulated products, and a repeal of ASOP No. 31 would thus create a void in the actuarial guidance for health benefit plan ratemaking.
Response	<p>The reviewers note that the cover memorandum to ASOP No. 31 specifically states that, “It is not a standard on ratemaking itself, but rather on the <i>documentation</i> of the ratemaking process.” Also, in section 1 of the ASOP, the purpose and scope, as described, are limited to documentation of the ratemaking process. The same is true for ASOP No. 41 and, as such, does not include references to specific assumptions. Appendix 1 could have been limited to providing guidance to actuaries regarding documentation requirements on ratemaking as contained in other ASOPs. This would have reduced the references in appendix 1 primarily to ASOP No. 41.</p>

However, the reviewers believe that it would be helpful to practicing actuaries to have a more comprehensive list of cross references than those pertaining to just documentation. Thus, appendix 1 was developed to provide guidance to practicing actuaries regarding all ASOPs that can be referenced on specific issues as it relates to ratemaking, including documentation. In addition, the reviewers note there are several ratemaking and pricing sources that a practicing actuary can reference, including study notes, practice notes, and textbooks in addition to the referenced ASOPs noted in appendix 1. The reviewers further note that much of the material contained in ASOP No. 31 is also contained in ASOP No. 8. Therefore, the reviewers believe the repeal of this ASOP is appropriate.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 32**

Revised Edition

Social Insurance

**Developed by the
ASOP No. 32 Task Force of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2020**

Doc. No. 196

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ASOP No. 32—June 2020

June 2020

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Social Insurance Programs

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 32

This document contains the revision of ASOP No. 32, *Social Insurance*.

History of the Standard

ASOP No. 32 was originally adopted in January 1998 and updated only for deviation language effective May 1, 2011. In 2016, the ASB reviewed ASOP No. 32 and appointed a task force to further review and produce an exposure draft of a revised standard.

The reasons for the review included the following:

1. some government programs covered by the standard, and some not covered by the standard, had evolved significantly since 1998;
2. standards in related practice areas had evolved significantly since 1998; and
3. the financial status of social insurance programs had become the subject of intense public scrutiny.

The task force members include actuaries practicing in each of the listed programs covered by the standard, actuaries with experience in related areas, and a non-actuary with expertise in the field of social insurance.

First Exposure Draft

The first exposure draft was issued in October 2018 with a comment deadline of February 1, 2019. Seven comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was issued in December 2019 with a comment deadline of February 14, 2020. One comment letter was received and considered.

Notable Changes from the Second Exposure Draft

There were no notable changes from the second exposure draft. However, changes were made to improve readability and clarity.

Notable Changes from the Existing ASOP No. 32 Adopted January 1998

Notable changes from the existing ASOP No. 32 adopted January 1998 include the following:

1. Section 1.2, Scope, was expanded to apply to actuaries when performing actuarial services in connection with an actuarial analysis of a Social Insurance Program when the actuary's principal is not a government agency with responsibility for the valuation of a Social Insurance Program. Such actuaries should follow the guidance to the extent practicable.
2. Section 1.2, Scope, was clarified to cover situations when a program was not specifically included or excluded from the scope.
3. Section 2.9, Social Insurance Program, was modified to include the characteristics of a Social Insurance Program previously included in section 1.2, Scope.
4. Language was added to section 2.9, Social Insurance Program, which states that financing is not based directly and fully on the risk profile of individual participants.
5. Requirements were added to sections 3.5 and section 4.1(e)(4) for situations where only a short-range valuation period is used, to include an explanation for why long-range projections were unreliable or inappropriate.
6. A disclosure requirement was added to section 4.1(d)(4) to indicate whether, in the actuary's professional judgement, the assumptions, other than prescribed assumptions or methods set by law or another party, are reasonable both individually and in combination.
7. A disclosure requirement was added to section 4.1(f)(5) to indicate that the results of actuarial projections performed in the future may differ materially from the results of current projections.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts. The ASB voted in June 2020 to adopt this standard.

ASOP No. 32—June 2020

ASOP No. 32 Task Force

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 32

SOCIAL INSURANCE

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to **Social Insurance Programs**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services in connection with an actuarial analysis of a **Social Insurance Program** when the actuary's principal is a government agency with responsibility for the valuation of a **Social Insurance Program**.

The standard also applies to actuaries with oversight responsibility for the actuarial services for **Social Insurance Programs** when serving as an auditor, reviewer, a member of an actuarial advisory committee, or a member of a technical panel. Such actuaries should follow the guidance to the extent practicable.

This standard applies to actuaries when performing actuarial services in connection with an actuarial analysis of a **Social Insurance Program** when the actuary's principal is not a government agency with responsibility for the valuation of a **Social Insurance Program**. Such actuaries should follow the guidance to the extent practicable.

This standard also applies to actuaries issuing an actuarial opinion related to a **Social Insurance Program** required by law or regulation and embedded in another document.

For **Social Insurance Programs** that provide protection directly to the population, *participant* or *individual* refers to a person. For **Social Insurance Programs** that provide protection through a guaranty or insurance-type arrangement, *participant* or *individual* may also refer to a plan or other entity.

This standard applies, but is not limited to, the following **Social Insurance Programs**:

- the Federal Old-Age and Survivors Insurance (OASI) program and the Federal Disability Insurance (DI) program, together known as the Social Security program;

- the Hospital Insurance (HI) and the Supplementary Medical Insurance (SMI) programs, together known as the Medicare program;
- Pension Benefit Guaranty Corporation (PBGC) programs; and
- the Railroad Retirement account program.

This standard does not apply to the following programs:

- workers' compensation programs;
- programs that primarily provide property/casualty insurance;
- the Railroad Unemployment and Sickness Insurance account programs;
- Medicaid;
- Children's Health Insurance Program;
- Health Insurance Exchanges under the Affordable Care Act;
- Supplemental Security Income Program;
- state-mandated disability income programs; and
- state-sponsored unemployment insurance programs.

This standard does not apply to actuaries performing actuarial services on behalf of private organizations that contract with the Medicare Advantage or Medicare Prescription Drug Programs.

If the actuary deviates from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4 for guidance on disclosing such deviation.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for any actuarial services performed on or after September 1, 2021.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Actuarial Status**—A measure of the relative value of **Program income** and **Program assets** to **Program costs** over a specified period of time.
- 2.2 **Financial Adequacy**—A condition in which **Program costs** are projected not to exceed the sum of **Program income** and **Program assets** over a specified period of time.
- 2.3 **Long-Range Period**—A period long enough to discern the general pattern and level of future costs. For some **Programs** this means a period long enough to cover the future lifetime of essentially all **Program** participants as of the valuation date.
- 2.4 **Program**—A term used interchangeably with **Social Insurance Program**.
- 2.5 **Program Assets**—The investments held by the **trust fund** and any cash balance available to meet **Program costs**.
- 2.6 **Program Cost**—The **Program's** expenditures for benefits (sometimes referred to as “claim costs”) and administrative or general expenses. The amount required to attain and maintain a target **trust fund** level may also be included in **Program cost**.
- 2.7 **Program Income**—The **Program's** earmarked tax income, investment income, premiums, general fund revenue, and any other receipts and income.
- 2.8 **Short-Range Period**—A period long enough to encompass a complete economic cycle or planning cycle, whichever is appropriate.
- 2.9 **Social Insurance Program**—A program with all of the following characteristics:
- a. key features, including benefits and financing method, are prescribed by statute or regulation;
 - b. financing is, in whole or in part, by contributions (for example, taxes or premiums) from or on behalf of individual participants according to a formula that may take

into account the wages and other income of the individual participants but that does not take into account directly and fully the risk profile of, or the amount of potential future benefits payable to, the individual participants. These contributions may be supplemented by government income from other sources. Explicit accountability of benefit payments and income usually is provided in the form of a **trust fund**;

- c. participation is universally (or almost universally) compulsory for a defined population, or the contribution is set at such a subsidized level that the vast majority of the eligible population participates;
 - d. eligible individuals are not required to demonstrate financial need to participate. However, certain program features could vary with individual circumstances. For example, a dependency status may need to be established, benefit reductions may apply to those who continue to work while receiving a benefit, or premium increases may apply to those who exceed an income threshold;
 - e. benefits for any individual are not directly related to contributions made by or with respect to that individual;
 - f. the system is administered or at least supervised by the government; and
 - g. the system is not established by the government solely for its present or former employees.
- 2.10 **Sustainability**—The capacity of a **Social Insurance Program** to continuously support the benefits provided by laws applicable to the **Program**, when considering the applicable financing mechanism and the potential future demographic and economic environment in which it will operate.
- 2.11 **Trust Fund**—An account to which income is credited and from which expenditures for benefits and often administrative or general expenses are deducted for a specified **Program**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Clarify the Assignment**—When taking on an assignment, the actuary should work with the principal to specify in writing the following:
- a. the role of the actuary and the purpose of the assignment;

- b. significant financing, accounting, or investment policies applicable to the **Social Insurance Program** related to the assignment;
- c. significant transition issues, if any, related to potential proposed changes to the **Social Insurance Program**; and
- d. objectives, if any, related to a specific funding target, the security of benefits, a principle of equity among generations, or a pattern of contribution rates.

3.2 **Coverage and Program Features**—The actuary should take into account relevant **Program** features, some of which may be unique to the **Social Insurance Program** or require special treatment as they relate to social insurance risks. In particular, the actuary should consider the ongoing nature of the **Program**, based on current legislation and regulations. If legislation has consistently been enacted to address a particular issue affecting a **Social Insurance Program**, the actuary may assume that this pattern of legislated changes will continue in the future when determining the **actuarial status** of the **Program**. If it is reasonable to assume that certain **Program** features are not viable over time, the actuary may develop alternative scenarios.

3.3 **Mechanisms for Setting the Level of Income or Cost**—In developing the assumptions and methods, the actuary should take into account the **Program's** current or proposed mechanisms for setting the level of income or cost. The primary mechanisms are as follows:

- a. Statutory—The **Program income** or the **Program costs** are specified by law for all future years and are changed only through legislative action;
- b. Administrative—The **Program income** or the **Program costs** may be changed periodically through administrative action;
- c. Automatic—The **Program income** is adjusted annually as specified by law to maintain **financial adequacy**; and
- d. General Fund Revenues—When applicable under statute, the excess of **Program cost** over other dedicated funding sources, such as beneficiary premiums, is provided for by transfers from the general fund revenues.

3.4 **Assumptions**—The actuary should use assumptions that are reasonable, both individually and in combination, and take into account anticipated future events affecting the related **Social Insurance Program**. The actuary should consider the actual past experience of the **Social Insurance Program** and take into account relevant factors that may create material differences in future experience. In selecting actuarial assumptions, the actuary should be guided, to the extent appropriate, by ASOP No. 6, *Measuring Retiree Group Benefits*

Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions, ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, and ASOP No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations.

In performing actuarial calculations regarding the **Program cost** or **Program income** of **Social Insurance Programs**, including the impact of proposed changes, the actuary should take into account the factors described below.

- 3.4.1 Demographic Assumptions—Demographic assumptions relate to the projections of the numbers and characteristics of individuals who are covered or potentially covered by the **Program**, contribute to the **Program**, or receive benefits from the **Program**. The actuary should take into account the rates of entry into and withdrawal from the covered population and the beneficiary population, evaluating whether assumed future rates are reasonable. When the numbers of covered individuals and beneficiaries are projected using current participant data only, the actuary should consider using data from the broader population in order to check for reasonableness.
- 3.4.2 Economic Assumptions—Economic assumptions relate to the projections of the level of income to the **Program** and the level of benefit payments by the **Program**. When the difference between two or more economic rates has a greater impact on **actuarial status** than the level of such rates, the actuary should take into account the relationship among the rates. The actuary should use assumptions that are reasonable and consistent, as discussed in ASOP No. 27.
- 3.4.3 Other Factors—In choosing assumptions, the actuary should consider experience related to the actual operation of the **Program**, including the following:
 - a. the rates of actual retirement, which may differ from the rates of receipt of the retirement benefit;
 - b. the effects of behavioral changes induced by the availability and level of benefits;
 - c. cost growth factors for health care compared to gross domestic product (GDP) per capita growth rates;
 - d. the administrative or general expenses for **Programs** where **Program income** finances the **Program's** administration; and

- e. bankruptcy rates of employers for certain **Programs**, including the relationship of such rates to the general economy and the correlation of such rates with assumptions for asset returns and discount rates.
- 3.4.4 Newly Established or Substantially Changed Social Insurance Programs—Credible experience data might not exist for a newly established **Program** or a substantially changed **Social Insurance Program**. To establish actuarial assumptions in such cases, the actuary may:
- a. investigate the risk characteristics of the potential covered population through surveys or other inquiries until credible data are available;
 - b. consider relevant external experience, such as the experience of other **Social Insurance Programs** (including the **Program** being replaced, if any) or the experience of similar programs in other countries; or
 - c. use reasonable proxies or default values.
- If fully credible experience does not exist to develop assumptions, the actuary should disclose that the analysis has been based on insufficient experience or data not specific to the **Social Insurance Program** under consideration. The actuary should consider recommending that the analysis be performed again when actual information becomes available.
- 3.5 Valuation Period—The actuary should select a valuation period appropriate to the purpose of the assignment. The actuary should consider selecting, for most **Programs**, both **shortrange** and **long-range periods**.
- When selecting the length of a valuation period, the actuary should consider the time horizon and economic environment in which the **Social Insurance Program** operates. For some **Programs**, the nature of the risk insured by the **Program** and significant changes in the participant base insured by the **Program** make long-range projections unreliable or inappropriate. In such instances, the actuary may use only a **short-range period** and disclose that a long-range projection is unreliable or inappropriate.
- Valuation periods that extend into the infinite horizon may provide an additional indication of the financial condition of the **Program** but the results are subject to a higher degree of uncertainty. The actuary should follow the disclosure requirements in sections 4.1(e) if required to perform an infinite horizon analysis.
- 3.6 Actuarial Projections—The actuary should produce year-by-year projections of **Program** operations. In doing so, the actuary should take into account the following:

- 3.6.1 **Actuarial Method**—The actuary should select an actuarial method for computing and summarizing estimates of **Program cost** or **Program income** consistent with the financing mechanism. If alternative financing mechanisms are valued, the actuary should select actuarial methods that are flexible enough to permit these valuations and provide consistent comparison of the alternative financing mechanisms.

The actuary should generally use an open-group method for **Programs** financed using a pay-as-you-go or partially-funded financing mechanism. An open-group method is one that reflects all participants, including those currently participating and those who are assumed to become participants in each future year of the valuation. The actuary should generally use a closed-group method for **Programs** financed using a mechanism that is intended to fully fund **Program** benefits over the current participants' working years. A closed-group method is one where only current participants as of the valuation date are included.

The actuary should be guided, to the extent appropriate, by ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, if the financing mechanism involves income derived from a defined benefit pension plan.

- 3.6.2 **Inclusion of All Material Financial Operations**—The actuary should include all material aspects of expected future **Program income** or **Program costs** under current law and regulation (except as noted in section 3.2), within the valuation period.
- 3.6.3 **Summarized Values**—Summarized values of the year-by-year estimates may be useful in communicating the **actuarial status** of the **Program**. When applicable, the actuary should choose a summarization method that is consistent with the **Program's** design and structure and its financing and investment structure. Summarized values in most cases are present values of the year-by-year projections.
- 3.6.4 **Experience Analysis**—The actuary should consider conducting an experience analysis, including both a comparison of actual and expected experience for the previous year and a comparison of results between the prior and the current valuation. This analysis could include a reconciliation of the financial impact of changes in actuarial assumptions and methods, changes in legislation or policy, **trust fund** investment gains or losses, changes due to the passage of time, and other components that contributed to the difference in results from one valuation to the next.

When evaluating **actuarial status**, the actuary should highlight when there is a risk that the **Program** will be unable to pay benefits when due at any time during the valuation period.

3.7 **Sensitivity Testing**—The actuary should consider performing an analysis of the sensitivity of **Program cost** or **Program income** under reasonable, alternative assumptions that are different from the valuation assumptions. In deciding whether to perform sensitivity testing, the actuary should consider the following:

- a. the intended use of the actuarial communication;
- b. the sensitivity of the **Program cost**, **Program income**, or **actuarial status** to the choice of the assumptions; and
- c. whether data used in setting assumptions has limited credibility or applicability.

3.8 **Tests of Financial Adequacy**—The actuary should consider creating a test for **financial adequacy** of a **Program** that assesses whether the **Program** financing is sufficient. Tests of **financial adequacy** may be based on criteria such as the following: 1) the estimated year of **trust fund** reserve depletion, 2) required **trust fund** levels, 3) positive **trust fund** levels under pessimistic assumptions, or 4) a low probability of **trust fund** reserve depletion under a stochastic model.

When performing a test of **financial adequacy**, the actuary should consider applying such a test to both the **short-range period** and **long-range period**. For certain **Programs**, given the nature of the risk insured by the **Program** and the occurrence or possibility of significant changes over time in the participant base insured by the **Program**, the actuary may test only for the **short-range period**.

For testing **financial adequacy** over a **short-range period**, the actuary should, in valuing **Program assets**, include only those assets that are readily available for the immediate payment of benefits.

3.9 **Assessment of Sustainability**—The actuary should consider performing an assessment of **sustainability** of a **Social Insurance Program**. In assessing **sustainability**, the actuary may use stochastic analysis or may examine patterns of projected relevant measures. Examples of relevant measures include the following:

- a. the ratios of **Program income** or ratios of **Program cost** for each future year of a **long-range period**, to either a measure of economic output, such as the GDP, or to the revenue base of the **Social Insurance Program**;
- b. the ratio of **Program assets** at the beginning of a year to the **Program cost** for that year, for each future year of a **long-range period**;

- c. the ratio of a **Program's** general fund revenues to total federal income taxes, for each future year of a **long-range period**; and
- d. the ratio of an individual beneficiary's projected out-of-pocket medical expenses for a **Program** (including premiums and cost-sharing) to the projected income the individual beneficiary may receive from Social Security or any other **Social Insurance Program**.

The actuary should consider providing commentary to help the intended user understand the assessment of **sustainability**.

- 3.10 **Individual-Level Examples**—The actuary should consider providing examples that describe the level of benefits or level of guarantee provided to individuals to provide additional context. The actuary may provide a schedule of benefits or guarantees for representative individuals or ratios of benefits or guarantees to salaries or other relevant revenue bases.
- 3.11 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.
- 3.12 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. When preparing documentation, the actuary should do so in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41, section 3.8, for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communications**—When issuing actuarial communications subject to this standard, the actuary should refer to ASOP Nos. 23 and 41. In addition, such actuarial communications should disclose the following, when practical and relevant:
 - a. clarification of the assignment, as discussed in section 3.1;
 - b. a description of the **Program** benefits, the population covered, and disclosure of any assumptions regarding the continuation into the future of a consistent pattern of legislated changes to the **Program**, as discussed in section 3.2;

- c. a description of the current or proposed mechanisms for setting the level of income or cost for the **Program**, as discussed in section 3.3;
- d. a detailed description of the assumptions and the basis for their determination, as discussed in section 3.4. The description should include the following, if applicable:
 1. any relevant factors or historical experience that led to the choice of assumptions;
 2. any assumptions that differ from recent experience because of trends, changes in the environment, or already-enacted future changes in the **Program** or its operation;
 3. any assumptions that were set using input or expertise from outside sources, the sources of such information, and the reasons for reliance on them; and
 4. a statement indicating whether, in the actuary's professional judgment, the assumptions (other than prescribed assumptions or methods set by law and assumptions identified in section 4.2[b]) are reasonable, individually and in combination.
- e. a description of the valuation period, as discussed in section 3.5. The actuary should also disclose the following, if applicable:
 1. the lengths of any selected **short-range period** and **long-range period**;
 2. a statement regarding the uncertainty associated with results that extend into the infinite horizon;
 3. a statement regarding any reservations about the length of the valuation period if it is selected by someone other than the actuary; and
 4. a statement indicating that a long-range projection is unreliable or inappropriate if only a short-range projection is performed.
- f. a description of the results of the actuarial projections performed, as discussed in section 3.6, including the following:
 1. a statement highlighting when there is risk that the **Program** will be unable to pay benefits when due at any time during the valuation period, noting any significant differences between **Program income** and **Program cost**

- toward the end of the valuation period and the expected impact of such differences on the future **actuarial status**;
2. a description of the actuarial method used, including whether an open group or closed group method was used;
 3. a description of the summarization method used, if applicable;
 4. the results of any experience analysis performed, if applicable; and
 5. a statement indicating that the results of actuarial projections performed in the future may differ materially from the results of current projections.
- g. a description of the results of any sensitivity testing performed as discussed in section 3.7;
 - h. a description of the results of any **financial adequacy** testing performed, as discussed in section 3.8, including the criteria used for the **financial adequacy** testing;
 - i. a description of the results of any **sustainability** assessment performed, as discussed in section 3.9, including the criteria used for the **sustainability** assessment; and
 - j. if applicable, examples that describe the level of benefits or level of guarantee provided to individuals, as discussed in section 3.10.
- 4.2 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, or other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this standard.

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- 4.3 Confidential Information—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Definition of Social Insurance Program for Purposes of ASOP No. 32

The task force surveyed educational materials that define social insurance and was guided by the definition of “social insurance” in the work done by the Committee on Social Insurance Terminology of the American Risk and Insurance Association (CSITARIA) in 1965 and 1966, which was referenced in the 2012 7th edition of *Social Insurance and Economic Security* by George E. Rejda and the 1985 3rd edition of *Social Insurance* by Robert J. Myers. There are a few differences between the CSITARIA definition and the definition in this revised standard:

- The task force added language regarding a trust fund to the item on financing. The CSITARIA definition did not include a trust fund as a defining characteristic of a social insurance program.
- The task force decided to not include a sentence from the CSITARIA definition that states, “There is a definite plan for financing the benefits that is designed to be adequate in terms of long-range considerations.” The task force did not find this statement to be true for several Programs covered by the standard, for which tax rates or premiums that are set by statute are not adequate for long-term Program solvency.
- The task force added language that states that financing is not based directly and fully on the risk profile of individual participants.

The following provides information on the reasons why some programs are not covered by the standard:

- Workers’ compensation programs—These programs are subject to certain ASOPs for property/casualty work. Requirements for workers’ compensation benefits can be satisfied by a variety of insured and self-funded arrangements.
- Railroad Unemployment and Sickness Insurance Account programs—These programs are railroad industry substitutes for state unemployment and workers’ compensation programs

and, in part, for Medicare. The funding does not allow for a long-term surplus or deficit to these programs since the benefits are short-term in nature.

- State-mandated disability income programs—While actuaries have been providing professional services for these programs, the guidance in ASOP No. 32 is not relevant to perform these services since the benefits are short-term in nature.
- State-sponsored unemployment insurance programs—While actuaries have been providing professional services for these programs, the guidance in ASOP No. 32 is not relevant to perform these services since the benefits are short-term in nature.

In addition to the programs listed above, actuarial services provided on behalf of private organizations that contract with the Medicare Advantage or Medicare Prescription Drug programs are not covered by this standard.

The following list of publicly financed programs and other government-run insurance programs do not meet the definition of social insurance, and therefore this standard does not apply:

- Medicaid—Eligibility depends on need in the form of low income and/or low assets.
- Children’s Health Insurance Program (CHIP)—Eligibility depends on need in the form of low income.
- Health Insurance Exchanges under the Affordable Care Act—Eligibility is not compulsory.
- Supplemental Security Income (SSI)—Eligibility depends on need in the form of low income and assets.
- Civil Service Retirement System (CSRS)—This program was established solely for government employees who were hired before 1987.
- The Federal Employees Retirement System (FERS)—This program was established solely for government employees who were hired in 1987 and later.
- Federal Employees’ Group Life Insurance (FEGLI) and Service members’ Group Life Insurance (SGLI)—These programs are voluntary and established for government employees.
- Veterans’ benefits—These benefits are established for former employees of the government, are financed entirely from general revenues, and for some benefits require income below a certain threshold.

- Federal Deposit Insurance Corporation (FDIC) and National Credit Union Administration (NCUA)—These programs may be property and casualty insurance programs.
- Federal crop insurance—This program is a non-compulsory property and casualty insurance program.
- Federal flood insurance—This program is a non-compulsory property and casualty insurance program.

Consideration of Expansion of Scope

The ASB asked that the task force to consider whether the scope of the standard should be expanded to include Medicaid, in particular, but potentially also certain other public assistance programs. The ASB noted that actuarial work is being performed for such programs, and the guidance in this standard might be adapted to cover such work. The task force also considered whether changing the definition of a Social Insurance Program would allow Medicaid to be covered.

A group was convened that included ASB members, task force members, and other actuaries whose work includes Medicaid projects. The group considered the issue of including Medicaid in the standard from various points of view. It explored specific items from ASOP 32 to determine whether the guidance in those items should apply to actuaries whose work includes the Medicaid program. The group found that this guidance was not relevant to Medicaid work, mainly because the Medicaid program has no dedicated assets and the work that Medicaid actuaries do mainly involves estimating program expenses and liabilities.

The task force also explored whether work done by actuaries on Medicaid projects is covered by other ASOPs, including ASOP No. 5, *Incurred Health and Disability Claims*. The task force identified one topic, the trending of incurred claim costs to future periods, which may not be adequately covered by current ASOPs. This topic is more general in nature and would not normally be considered for inclusion in an ASOP that applies to social insurance programs.

The task force considered whether the broader policy community (beyond just actuaries) considers Medicaid to be a social insurance program. One task force member, who is a leader in the policy community, believed that Medicaid is often studied with social insurance programs because of its relationship to Medicare and long-term care, not because it is considered a social insurance program. Some task force members, who believed that Medicaid is not a social insurance program and that ASOP No. 32 should not be expanded to include Medicaid, suggested consideration of the development of a more specialized standard of practice for public assistance programs, which might include programs such as Medicaid, the Children’s Health Insurance Program, the Veterans Health Administration, public health insurance exchanges, and SSI.

The task force ultimately reached consensus on proceeding with a first exposure draft without changing the scope materially from the current standard and agreed to solicit and encourage public comments on this issue. As a result of the comments received following the first exposure draft, the ASB expanded the scope to include any program which meets the Section 2.9 definition of Social Insurance Program in the scope of the standard except for a list of specifically excluded programs. The ASB also expanded the scope to include actuarial services for a Social Insurance Program provided to a non-governmental employer to the extent practicable.

Importance of Projecting the Costs of Social Insurance Programs

The task force discussed the following:

- the current actuarial challenges of Programs covered by the standard;
- stakeholders and users of actuarial services for such Programs;
- Program actuaries' current use of ASOP No. 32 and other ASOPs to resolve issues; and
- the main metrics currently used for communicating the status of Programs covered by the standard.

Most of the covered Programs are experiencing financial challenges and facing long-term deficits. The task force noted that while the specific metrics on current and projected financial status may vary from Program to Program, the calculation and communication of such metrics is valuable for stakeholders. The task force believes that the current standard has been a useful tool in providing guidance on calculation of metrics and that it is important to update it.

Current Practices

Tests of Financial Adequacy

Several well-established formal methods are currently being used to test the financial adequacy of Social Insurance Programs, as well as measures developed to assess the actuarial status and sustainability of these Programs over different time periods.

The frequency with which Programs assess their financial status varies. Some (OASDI, Medicare, and PBGC, for instance) evaluate their financial position each year, while others, such as the Railroad Retirement Board, may perform a valuation every third year.

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The projection period used by the different Programs also varies. While OASDI and Medicare use a projection period of 75 years, PBGC considers a projection period of 10 to 20 years to be appropriate.

The major Social Insurance Programs (OASDI, Medicare HI, and PBGC) project the future year in which that Program's asset reserves are expected to become depleted under various scenarios.

Various other metrics are also used by the different Programs to measure and communicate the current and projected financial status. For example, OASDI and Medicare HI determine the current and projected trust fund ratios (beginning of year asset reserves divided by costs payable during the year) while PBGC projects the net financial position (assets less liabilities). The Railroad Retirement Board employs a metric called the Accounts Benefit Ratio (assets at the end of a year divided by benefits and expenses during the year).

In cases where a longer-term projection is not reasonable, an assessment of Program operations over the next one to five years is often performed.

Caveats

This standard does not address every circumstance that could arise because of variations in benefits, financing mechanisms, the number of Program participants, investment media and policies, measures of actuarial status, specialized actuarial assumptions relevant to the Program, dramatic changes in the participant base insured by the Program, or other relevant factors.

For Programs such as OASI and DI, benefit amounts and the incidence of claims are reasonably predictable and variances from expected values usually emerge gradually. Under PBGC's Programs, on the other hand, benefit amounts can vary widely, the incidence of claims can be highly unpredictable, and the experience of a relatively small number of pension plans can dramatically affect future projections. A sustained trend towards a smaller participant base in the PBGC's pension insurance programs may also affect actuarial results in unanticipated ways.

Appendix 2

Comment on the Second Exposure Draft and Response

The second exposure draft of the proposed revision of ASOP No. 32, *Social Insurance*, was issued in December 2019 with a comment deadline of February 14, 2020. One comment letter was received. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 32 Task Force and the ASB carefully considered the comment received.

Summarized below is the significant issue contained in the comment letter and the response. Minor wording or punctuation changes that are suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 32 Task Force and the ASB. Unless otherwise noted, the section number and title used in appendix 2 refer to those in the second exposure draft.

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communications	
Comment	One commentator suggested that section 4.1(f)(1) should require an additional disclosure which would require a qualitative or quantitative description of the expected future pattern of changes in the current actuarial status resulting solely from the passage of time.
Response	The reviewers note that the guidance in section 4.1(f) provides for a description of the results of the actuarial projections performed during the valuation period. The reviewers also note that section 4.1(f)(1) requires the disclosure of any significant differences between Program income and Program cost toward the end of the valuation period and the expected impact of such differences on the future actuarial status. Therefore, the reviewers made no change to the disclosure requirement in section 4.1(f)(1) in response to this comment.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 33**

Actuarial Responsibilities with Respect to Closed Blocks in Mutual Life Insurance Company Conversions

**Developed by the
Closed Block Task Force of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
January 1999**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 150)

T A B L E O F C O N T E N T S

Transmittal Memorandum

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February 1999

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Mutual Life Insurance Company Conversions

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 33

This booklet contains the final version of Actuarial Standard of Practice No. 33, *Actuarial Responsibilities with Respect to Closed Blocks in Mutual Life Insurance Company Conversions*.

Background

In the past decade, an increasing number of mutual life insurance companies have converted to stock life insurance companies, sometimes including the formation of a mutual holding company. Demutualizations present important actuarial issues, including the preservation of reasonable policyholder dividend expectations and, in a traditional demutualization, the allocation among eligible policyholders of the compensation due them in exchange for their membership rights (i.e., consideration).

This actuarial standard of practice (ASOP) deals with actuarial responsibilities with respect to closed blocks, which have often been used as devices to preserve reasonable policyholder dividend expectations. (This ASOP addresses situations in which a closed block is used; it does not require that a closed block be used.) Actuaries are often involved in all aspects of a closed block, including advising on the types of policies that should be included, the initial funding, and the development of the operating rules; and in reviewing actual operations once a closed block has been established.

Drafting Issues

A draft of this standard was exposed for review and comment in a document dated May 1998, with a comment deadline of September 1, 1998. Eighteen comment letters were received. The Life Committee's Closed Block Task Force and the committee members reviewed each comment carefully and made a number of changes to the exposure draft in response (see appendix 2).

The comment that prompted the most discussion was one that objected to the approach taken in the exposure draft to setting the reinvestment rate when the investment policy of the closed block differed from that underlying the current dividend scale. The committee made two changes in response to this letter.

1. The committee added the following sentences:

Usually, policyholders would not expect that the company's investment policy for new assets would change as a result of the establishment of the closed block. Therefore, policyholders' reasonable dividend expectations are most likely to be met if the investment policy for new assets to be purchased with the closed block's cash flows is the same as the investment policy underlying the current dividend scale.

2. The committee replaced a requirement that the actuary consider any change in investment policy with a requirement that the actuary fully disclose the effect of any non-recognition of a change in investment policy.

The Closed Block Task Force and the Life Committee thank all those who commented on the exposure draft. The ASB voted in January 1999 to adopt this standard.

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ACTUARIAL STANDARD OF PRACTICE NO. 33

ACTUARIAL RESPONSIBILITIES WITH RESPECT TO CLOSED BLOCKS IN MUTUAL LIFE INSURANCE COMPANY CONVERSIONS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this standard is to define the responsibilities of an actuary when the actuary is asked to advise on, review, or opine on a proposed or existing closed block formed in connection with a mutual life insurance company conversion.
- 1.2 **Scope**—This standard of practice applies to actuaries who perform professional services in connection with the design and operation of a closed block in conjunction with the conversion of a mutual life insurance company to a stock life insurance company, including conversion to a mutual holding company structure.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will apply to any actuarial work performed or opinions issued on or after June 1, 1999.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Applicable Law**—Federal, state, and local statutes, regulations, case law, and other binding authority that may govern the conversion of the subject mutual life insurance company to a stock life insurance company, including conversion to a mutual holding company structure.

- 2.2 **Closed Block**—A mechanism to preserve (over time) the reasonable dividend expectations of policyholders with individual life, health, or annuity policies. A closed block comprises a defined, limited group of policies and a defined set of assets, and is governed by a set of operating rules. All cash flows arising from the closed block are exclusively committed to supporting the policies in the closed block as specified in the operating rules.
- 2.3 **Individual Policy**—Any policy (or contract) that is defined as an individual policy under state insurance law or by the terms of the policy. Any certificate issued under any other policy that is sold to a passive trust but is marketed to individuals is also defined as an *individual policy* for purposes of this standard.
- 2.4 **Initial Assets**—The assets allocated to a closed block at its inception. The assets of the closed block may be either of the following:
- a. a distinct segment of assets (which may contain either 100% or a specified fraction of each designated asset) associated exclusively with the closed block; or
 - b. a defined share of a larger segment of assets. Such larger segment may also contain assets associated with participating business sold after the date of conversion. Such defined share will vary from time to time according to the methodology specified in the operating rules.
- 2.5 **Initial Liabilities**—The obligations ascribed to the closed block at its inception by the operating rules.
- 2.6 **Operating Rules**—All portions of the plan of conversion that specify the methods and procedures for setting up, maintaining, and monitoring the operations of a closed block.
- 2.7 **Reasonable Dividend Expectations**—The expectations that the current dividend scale will be maintained if the experience underlying the current scale continues, and that the dividend scale will be adjusted appropriately if the experience changes.
- 2.8 **Reinvestment Rate**—The assumed yield rate on assets to be purchased with the closed block’s cash flows.
- 2.9 **Tontine**—An outcome of a closed block in which relatively few last surviving policyholders receive dividends substantially disproportionate to those previously received by other policyholders in the same closed block, particularly policyholders who had persisted for a considerable period.

Section 3. Analysis of Issues and Recommended Practices

The actuary may be requested to advise on, review, or opine on various aspects of the closed block. In doing so, the actuary should be guided by the following:

- 3.1 **Objectives of the Closed Block**—The objective in establishing the closed block is to preserve the reasonable dividend expectations of each class of policyholders. After the closed block is established, the objective is to manage aggregate dividends so as to exhaust the assets when the last policy terminates, while avoiding the creation of a tontine.
- 3.2 **Policy Inclusion Criteria**—Policies included in a closed block should be reasonably expected to generate experience-based policy dividends over which the company has significant discretion. Policies chosen for inclusion should be such that the number of policies will decrease to zero in a finite time. These policies are usually individual policies. Practical considerations may result in the inclusion of other policies.
- 3.3 **Determination of Funding**—The actuary should ensure that the initial assets, together with the anticipated revenue from the closed block business, are reasonably expected to be just sufficient to permit the closed block to pay all policy benefits, including dividends according to the current dividend scale, and other items identified in the operating rules, if the funding assumptions are realized. These assets should include all policy loans and due and deferred premiums on policies in the closed block. It is customary to assign to the closed block the due and accrued investment income on the initial assets.

The actuary should be satisfied that the methods and assumptions used to calculate the amount of the initial assets are consistent with the operating rules and the assets' characteristics. If the actuary finds that the operating rules are ambiguous, then the actuary should state, in his or her written report, the interpretation he or she used to determine the funding.

- 3.4 **Funding Assumptions**—The actuary should select assumptions consistent with the recent experience underlying the current dividend scale for the closed block policies; these assumptions are not necessarily the factors used in the dividend formula. The actuary should use his or her best estimates of cash flows from the initial assets and the reinvestment rate assumption described in section 3.4.1. The actuary should review the data relevant to an assumption. If the data are inconclusive, the actuary may include a modest provision for uncertainty that is designed to increase rather than reduce the amount of initial assets.

3.4.1 **Reinvestment Rate**—The actuary should choose a reinvestment rate assumption that is directly related to the company's practice for determining its current dividend scale for business to be placed in the closed block. Dividend structures commonly fall into one of three types:

- a. **Portfolio Rate**—If the company uses a dividend scale based on a portfolio rate, then the reinvestment rate should be equal to the portfolio rate that underlies the current dividend scale.

- b. Segmented Portfolio Rate—If the company uses a dividend scale based on asset segments or an investment generation method to allocate investment income among generations of policies or among different products, then multiple projection segments with different reinvestment rate assumptions are used. The reinvestment rate for each projection segment should be equal to the segment portfolio rate that underlies the current dividend scale for that generation of policies.
- c. Generational Rate—If the company uses a dividend scale that credits investment returns to each policyholder based on the investment generations of that policy's cash flows, then the reinvestment rate should be equal to the investment rate that underlies the rate being credited on current cash flows.

If capital gains and losses have been reflected in some way in the investment rate underlying the current dividend scale, then the actuary should include those gains or losses in a consistent fashion in determining the reinvestment rate assumption.

If the investment rate underlying the current dividend scale reflects gains from other sources (such as group lines of business or earnings on surplus), then the actuary should not include the effect of such gains in setting the reinvestment rate assumption, unless the operating rules provide for crediting such gains to the closed block.

Usually, policyholders would not expect that the company's investment policy for new assets would change as a result of the establishment of the closed block. Therefore, policyholders' reasonable dividend expectations are most likely to be met if the investment policy for new assets to be purchased with the closed block's cash flows is the same as the investment policy underlying the current dividend scale. However, if the closed block investment policy is different from the investment policy underlying the current dividend scale, the actuary may, notwithstanding earlier provisions of this section, modify the reinvestment rate assumption to reflect the change. If the change in investment policy is not fully reflected in the reinvestment rate assumption, the actuary should disclose this fact in his or her opinion. The disclosure should include the following:

- a. the extent to which this change in investment policy was not reflected in the reinvestment assumption;
- b. the rationale for having not fully reflected this change; and
- c. whether future dividend scales are expected to be higher or lower as a result of having not fully reflected this change.

If the plan of conversion does not specify an investment policy for new assets to be purchased for the closed block, the actuary should obtain a statement of such investment policy from company management and refer to it in the actuarial report and statement of actuarial opinion (see section 4.3).

- 3.4.2 Mortality and Morbidity—The actuary should select assumptions that are consistent with the experience underlying the current dividend scale for the closed block policies.
 - 3.4.3 Lapses—The actuary should choose a lapse assumption that is consistent with company experience. Experience data antedating public knowledge that the company was considering converting are preferable to later experience data, which may have been distorted by the announcement.
 - 3.4.4 Commissions and Expenses—The treatment of commissions and expenses should be in accordance with that detailed in the operating rules (see section 3.5.3).
 - 3.4.5 Taxes—The treatment of taxes should be in accordance with that detailed in the operating rules (see section 3.5.4).
 - 3.4.6 Other Factors—The actuary should take into account the company's recent experience with respect to other relevant factors, such as dividend options, nonforfeiture options, reinsurance, conversions, or riders.
- 3.5 Operating Rules—The operating rules are an integral part of the plan of conversion of the mutual life insurance company. Any actuary drafting or reviewing the operating rules should ensure that the operating rules cover all charges and credits to the closed block, including at least the treatment of insurance cash flows (including reinsurance, if any), investment cash flows, and the bases for charging commissions, expenses, and taxes; and that the initial assets and liabilities are defined.
- 3.5.1 Insurance Cash Flows—The operating rules should set forth the procedure for crediting and charging cash flows related to policy premiums and benefits to the closed block. For example, cash premiums, cash repayments of policy loans, and policy loan interest paid in cash on closed block policies would usually be credited to the closed block; death, surrender, and maturity benefits paid in cash, policy loans taken in cash, annuity and other income benefits, and dividends paid in cash would usually be charged to the closed block.
 - 3.5.2 Investment Cash Flows—The operating rules should specify which investment earnings or cash flows should be credited or charged to the closed block. For example, cash flows related to the assets allocated to the closed block, such as dividend and interest payments, and maturities and sales of assets, would usually be credited; brokerage expenses and other expenses directly related to the acquisition, maintenance, or sale of a closed block asset would usually be charged to the closed block.

- 3.5.3 Commissions and Expenses—The operating rules should specify the method for calculating future commission and expense charges, if any, to the closed block.
- 3.5.4 Taxes—The operating rules should specify the method for calculating any future tax charges to the closed block. Because a closed block is not a separate taxable entity, allocation methods will have to be developed for some tax items.
- 3.5.5 Initial Liabilities—The operating rules should specify each category of liability, and its amount, that will be assigned to the closed block at its inception. The asset valuation reserve (AVR) and interest maintenance reserve (IMR) are usually excluded from the closed block because they are not cash items.
- 3.6 Closed Block Operation—When advising a company on the operation of an existing closed block, the actuary should recommend a dividend scale that is consistent with the goal of exhausting the assets when the last policy terminates, while avoiding the creation of a tontine. When reviewing the operation of an existing closed block, the actuary should determine whether the total amount of dividends is consistent with this goal. In either case, the actuary should be mindful of the guidance found in ASOP No. 15, *Dividend Determination and Illustration for Participating Individual Life Insurance Policies and Annuity Contracts*, with respect to the allocation of dividends among classes of policies.

Section 4. Communications and Disclosures

- 4.1 Reliance on Data Supplied by Others—The actuary may rely on data supplied by another. In doing so, the actuary should disclose both the fact and the extent of such reliance. The accuracy and comprehensiveness of data supplied by others are the responsibility of those who supply the data. However, when practicable, the actuary should review the data for reasonableness and consistency. For further guidance, the actuary is directed to ASOP No. 23, *Data Quality*.
- 4.2 Reliance on Asset Cash-Flow Projections Supplied by Others—The actuary may rely on asset cash-flow projections or other analyses of assets supplied by others—for example, projections of real estate or equity assets. In doing so, the actuary should disclose both the fact and the extent of such reliance. The accuracy and soundness of projections supplied by others are the responsibility of those who supply the projections. However, when practicable, the actuary should review the projections for reasonableness and consistency.
- 4.3 Actuarial Report and Statement of Actuarial Opinion—At the time of the establishment of a closed block, an actuary who advises an employer or client concerning the closed block’s development or who reviews a closed block under development on behalf of an employer or client should issue a written actuarial report or statement of actuarial opinion concerning the appropriateness of the closed block arrangements, unless another actuary advising the same entity is issuing such a report or statement. Each actuarial report or

statement of actuarial opinion usually should express an opinion concerning the classes of policies to be included in a closed block, the appropriateness of the operating rules of the closed block, and the sufficiency of the funding of the closed block, all in light of the objective of the closed block.

An actuary who advises an employer or client on the operation of a closed block that is already in existence, or reviews a closed block already in existence on behalf of an employer or client, should issue a written actuarial report or statement of actuarial opinion concerning the operations of the closed block, unless another actuary advising the same entity is issuing such a report or statement. Any such report or statement should address the subject described in section 3.6, and may also discuss other aspects of closed block operations.

An actuary who is testifying about a proposed or actual closed block should consult ASOP No. 17, *Expert Testimony by Actuaries*, for guidance on expert testimony.

4.4 **Disclosures**—The actuary should include the following, as applicable, in the actuarial report or statement of actuarial opinion:

- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In the early 1980s, a few large mutual life insurance companies evinced an interest in demutualization. The Society of Actuaries (SOA) responded to this interest in 1984 by appointing a task force on mutual life insurance company conversion with the following charge: “To examine the actuarial issues involved in converting a mutual life insurance company to a stock form of ownership, and to produce a record of its examination.”

At that time there had been relatively few conversions of mutual insurance companies, and most of these had been conversions of property and casualty companies. The few mutual life insurance company conversions had involved relatively small companies or immediate acquisition by another company; many of the issues that a large, multi-line mutual life insurance company would encounter in a conversion to an independent stock life insurance company were new. To the extent that states had laws permitting such conversions, these laws had been derived from, or were identical to, laws applicable to conversions of property and casualty companies. There was relatively little actuarial literature on the subject.

The “Report of the Task Force on Mutual Life Insurance Company Conversion,” completed in July 1987 by the SOA (see *Transactions* 39 (1988): 295–391), covered what the task force considered to be the three principal actuarial aspects of a mutual life insurance company conversion: how to maintain policyholders’ reasonable dividend expectations; how to determine the aggregate amount of compensation due to policyholders in exchange for their membership rights; and how to allocate this aggregate amount of compensation among participating policyholders.

The report stated that the conversion plan should be designed to assure policyholders that their reasonable dividend expectations (i.e., that the current dividend scale would continue if current experience continued) would be met. Otherwise, policyholders would be required, when voting on the conversion plan, to weigh the compensation offered for the cancellation of their membership rights against the possibility of reduced dividends. The SOA task force considered a number of methods of maintaining policyholders’ dividend expectations and concluded that the closed block approach was the most promising for most individual coverages.

The SOA task force recognized that a closed block may not be appropriate or effective for all lines of business and, thus, that decisions must be made as to the classes of business to be

included in a closed block. To the extent that these decisions are not preempted or prescribed by statute, the task force suggested the following criteria:

1. If, for a class of policies, there is an expectation of substantial policy dividends and the company has significant discretion as to whether those dividends are paid and in what amounts, the class should probably be included in the closed block.
2. If the dividend structure for a class of policies is based more on broad averaging of costs than on policy-by-policy experience rating, the class should probably be included in the closed block. Policies that are experience rated largely on an individual basis should probably not be included.
3. Classes of policies included in the closed block should be expected to diminish in size with the passage of time and, eventually, to disappear. Any class of policies not expected to diminish over time probably should not be included.

Demutualization Statutes

Many states enacted legislation governing the conditions under which life insurance companies can convert to the stock form, both before and after the task force's report. For example, the New York statute requires that the plan of conversion be "fair and equitable to the policyholders." More particularly, the New York statute requires that participating business that is in force on the effective date of the conversion must be operated by the reorganized insurer as a closed block, for policyholder dividend purposes only. Some or all classes of group policies and contracts may be excluded from the closed block.

The past few years have seen the advent of the mutual holding company form of conversion. With this form, just as with a traditional demutualization, a mutual life insurance company is converted to the stock form of ownership. Ultimately, if not immediately, the converted life insurance company may have owners other than policyholders, and the policyholders' reasonable dividend expectations will need protection.

To date, all conversions that have involved outside (non-policyholder) shareholders, whether occasioned by traditional demutualization or by conversion to a mutual holding company structure, have, with minor exceptions, resulted in the formation of a closed block. Generally, only dividend-paying participating individual policies (including some group policies that were marketed and administered as individual) have been included within the closed block. Other protective mechanisms have sometimes been used for non-dividend-paying policies that contained some form of discretionary benefit.

The Role of the Actuary

The New York statute requires that "one or more qualified and disinterested actuaries," appointed by the superintendent, certify "the reasonableness and sufficiency" of the assets

initially allocated to the closed block. This certification must “be made in accordance with professional standards and practices generally accepted by the actuarial profession and such other factors as such actuary in his professional judgment believes are reasonable and appropriate.” Some states, Illinois being an example, require that an opinion of the actuary as to the sufficiency of the initial asset allocation “be based on methods of analysis deemed appropriate for those purposes by the Actuarial Standards Board.”

Actuaries are often involved in all aspects of a closed block, advising on the selection of policies to be included, the initial funding, and the operating rules, and, subsequently, reviewing the operation. Actuaries have acted in at least three roles: as the company’s own actuaries; as independent consulting actuaries who may both advise the company and provide independent opinions to management, the board of directors, policyholders, and to the state regarding certain aspects of the closed block; and as independent actuaries retained by a supervisory authority for advice and to provide one or more opinions on certain aspects of the closed block.

This ASOP reflects what is considered good practice used in the establishment of closed blocks up until this time. The unique circumstances and characteristics of each mutual company, however, make it impossible to state with confidence that the goal of protecting policyholders’ reasonable dividend expectations can be met, in all future transactions, without deviating from this standard in some way as yet unforeseen. The actuary is best qualified, of all participating professionals, to assess and analyze the particular circumstances and operating philosophies of the mutual company, as demonstrated over its history, in determining what actually constitutes “reasonable dividend expectations” and to recommend funding to that end.

Appendix 2

Comments on the Exposure Draft and Committee Responses

The exposure draft of the proposed standard was circulated for review in May 1998, with a comment deadline of September 1, 1998. Eighteen letters of comment were received. The Closed Block Task Force and the Life Committee carefully reviewed each comment and made a number of changes in response. Summarized below are the significant issues and questions contained in the comment letters, printed in roman. The committee's responses appear in **boldface**.

General Comments

Several comment letters did not apply to any particular part of the exposure draft. One letter approved of the proposed actuarial standard of practice (ASOP); another letter disapproved of the proposed ASOP and of the concept of closed blocks. One letter suggested that a closed block should be funded with assets equal to liabilities and profit transfers made periodically. Another letter requested guidance on how to avoid a tontine. Another letter suggested that guidance should be given on reinsurance that should be secured by the closed block to avoid mortality fluctuations. **The committee did not make any change to the ASOP as a result of these letters.**

One letter requested guidance on spreading deviations of actual from expected experience over several years. **The committee felt that this question was beyond the scope of this ASOP.**

Transmittal Memorandum

In the exposure draft's transmittal memorandum, the committee drew its readers' attention to three provisions in particular: section 3.4, Funding Assumptions; section 3.4.1, Reinvestment Rate Assumption; and section 3.4.5, Taxes. Please see those sections, below, for discussion of any pertinent readers' comments and committee responses.

Two commentators objected to the term *full demutualization*, which appeared elsewhere in the transmittal memorandum. **The committee changed the term to *traditional demutualization*.** Three letters suggested recognizing protection methods other than closed blocks. **The committee acknowledges that there are other valid methods, but believes them to be beyond the scope of this ASOP.**

Section 1. Purpose, Scope, and Effective Date

Section 1.3, Effective Date—One commentator suggested that section 1.3 should encourage earlier implementation of the ASOP. **The committee changed the effective date at the ASB's direction.**

Section 2. Definitions

Five commentators requested a definition of *reasonable dividend expectations*. **The committee added such a definition (see section 2.7).** One letter commented on the definition of *individual policy* used; another letter requested a definition of *group policy*; a third suggested adding a definition of *initial liabilities*. **The committee edited the definition of individual policy (see section 2.3) slightly; decided not to define group policy; and added a definition of initial liabilities (see section 2.5).**

Section 3. Analysis of Issues and Recommended Practices

Section 3.2, Policy Inclusion Criteria—One commentator suggested that universal life insurance policies should be included in closed blocks and that the guidance on what policies should be included should be expanded. Several letters requested more examples. **The committee did not agree that more examples would clarify the proposed standard. The committee retained section 3.2 as written.**

Section 3.3, Determination of Funding—One letter suggested including due and accrued investment income in section 3.3. **The committee edited section 3.3 to include such income.** Two letters suggested editorial changes to section 3.3. **Some of the suggested editorial changes appear in the revised text.**

Section 3.4, Funding Assumptions—In the exposure draft's transmittal memorandum, the committee asked for comment on this section as follows:

Section 3.4, Funding Assumptions, states that the assumptions should be consistent with the recent experience underlying the current dividend scale. An alternative position could be that the assumptions should be consistent with the experience underlying the dividend scale at the last time it was approved by the board of directors, which may have been several years ago. The Life Committee believes that the approach set forth in the exposure draft is preferable, but welcomes comments.

No comment letters directed to this point were received and the committee believes that the approach taken by the standard is appropriate.

One letter suggested that section 3.4 specifically refer to the possible use by a closed block of a slice of a larger portfolio. **Language has been added to the definition of initial assets (see section 2.4) to accommodate this suggestion.**

Several letters suggested editorial changes. **The committee adopted some suggested changes to improve clarity.**

Section 3.4.1, Reinvestment Rate Assumption (now titled Reinvestment Rate)—In the exposure draft’s transmittal memorandum, the committee asked a specific question about this section as follows:

Section 3.4.1, Reinvestment Rate Assumption, provides for an adjustment to the reinvestment rate assumption if the investment policy for assets to be purchased for the closed block is different from the investment policy underlying the current dividend scale (i.e., the dividend scale in effect immediately prior to the establishment of the closed block). This statement implies that if the closed-block’s cash flows are to be invested in assets significantly different, in type or maturity pattern, from assets underlying the current dividend scale, the reinvestment rate should be modified. For example, the investment policy might state that closed-block investments are not to include a substantial common stock component that underlies the current scale, or that closed-block assets are to be invested in debt instruments of significantly shorter maturities than those underlying the current scale. Should the ASOP provide more guidance in this area?

One comment letter objected to the approach taken in the exposure draft to setting the reinvestment rate when the investment policy of the closed block differed from that underlying the current dividend scale. **The committee made two changes in response to this letter:**

1. The committee added the following sentences:

Usually, policyholders would not expect that the company’s investment policy for new assets would change as a result of the establishment of the closed block. Therefore, policyholders’ reasonable dividend expectations are most likely to be met if the investment policy for new assets to be purchased with the closed block’s cash flows is the same as the investment policy underlying the current dividend scale.

2. The committee replaced a requirement that the actuary consider any change in investment policy with a requirement that the actuary fully disclose the effect of any non-recognition of a change in investment policy.

One letter suggested that where the experience had changed dramatically since the dividend scale was set, but before the closed block was funded, current experience, rather than the experience underlying the dividend scale, should be used. **The committee found this to be inconsistent with the purpose and design of a closed block and made no change.**

Section 3.4.2, Mortality and Morbidity—One letter indicated that the commentator thought that section 3.4.2 referred to the dividend mortality rather than to the mortality underlying the dividend scale. **The committee believes that the meaning is clear.**

Section 3.4.4, Commissions and Expenses—One letter suggested that expenses should always be funded by the closed block. This is contrary to current practice. **The committee made no change.**

Section 3.4.5, Taxes—The committee had explicitly asked for comment on this section in the exposure draft's transmittal memorandum as follows:

Section 3.4.5, Taxes, does not discuss the treatment of the IRC Section 809 so-called equity tax on mutual insurance companies. Historically, this tax (even if it is still payable) has not been charged to the closed block in the operating rules and therefore has been ignored in the funding calculations.

Some dividend scales contain either an implicit or explicit charge to reflect the equity tax. The Life Committee considered whether the operating rules should specify making this charge to the closed block under the tax allocation procedures, provided the company was still subject to the equity tax. If the company were not subject to the equity tax, this charge would not be allocated to the closed block. Under this approach (which has not to our knowledge been followed in any transaction), the charge would be assumed in the closed-block funding calculations so that if and when the company were no longer subject to the equity tax, the closed-block policies would benefit to the extent they had been previously charged. The ASB Life Committee believes that the approach set forth in the exposure draft is preferable, but welcomes comments.

No letters on this point were received and the committee believes that the approach taken in the ASOP is appropriate.

A number of commentators made editorial suggestions, particularly with respect to section 3.4, Funding Assumptions, and section 3.5, Operating Rules. **The committee considered all editorial suggestions and adopted a number of them.**

The Closed Block Task Force and the Life Committee of the ASB thank everyone who took the time and made the effort to submit comments.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 34**

Revised Edition

**Actuarial Practice Concerning
Retirement Plan Benefits in Domestic Relations Actions**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2015**

Doc. No. 180

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June 2015

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 34

This document contains the final version of a revision of ASOP No. 34, *Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions*.

Background

ASOP No. 34 was approved by the ASB in September 1999. The ASB is issuing this revision to address concerns that the existing disclosure requirements in the standard do not sufficiently assist users in understanding large differences in the valuation results prepared by different actuaries.

In addition, several actuarial standards of practice applicable to work with pension plans have been recently revised. In September 2013, the ASB issued a revised ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. In December 2013, the ASB issued a revised ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. In September 2014, the ASB issued a revised ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. Revision of ASOP No. 34 is necessary to provide guidance consistent with the guidance in these other actuarial standards of practice.

Exposure Draft

The exposure draft of this ASOP was issued in September 2014 with a comment deadline of January 31, 2015. Five comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2.

Key Changes

Key changes from the version of ASOP No. 34 adopted September 1999 include the following:

1. Section 3.3.4 has been modified to indicate that each assumption selected by the actuary should be individually reasonable and consistent with the other assumptions selected by the actuary, in accordance with ASOP Nos. 27 and 35.

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2. Section 3.3.4(b) has been modified to indicate that, unless another assumption is clearly warranted by the facts and circumstances, the actuary should select a mortality table with adjustments to reflect expected mortality improvement before and after the measurement date that, in the actuary's professional judgment, reasonably reflects the expected mortality experience of similarly situated individuals.
3. Section 3.3.5 has been modified to indicate that the actuary should not determine a life expectancy from the chosen mortality table and then compute the value of an annuity certain for a term equal to that life expectancy, as it may produce materially inaccurate results.
4. Section 4.4 requires disclosure of a brief description of the rationale for selection of assumptions and allocation methods.

The ASB voted in June 2015 to adopt this standard.

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

**ACTUARIAL PRACTICE CONCERNING
RETIREMENT PLAN BENEFITS IN
DOMESTIC RELATIONS ACTIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This standard does the following:
- a. provides guidance to actuaries who perform professional services concerning **retirement plan** benefits in **domestic relations actions**;
 - b. amplifies those provisions of Actuarial Standard of Practice (ASOP) No. 17, *Expert Testimony by Actuaries*, and ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, that relate to actuarial practice concerning **retirement plan** benefits in **domestic relations actions**; and
 - c. provides information to enhance understanding of the actuary's role and responsibilities, and of the factors that may affect the measurement, allocation, or division of **retirement plan** benefits in **domestic relations actions**.

- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services in connection with the measurement, allocation, or division of **retirement plan** benefits in **domestic relations actions**. This standard is not applicable to actuarial services performed in connection with other post-employment benefits, such as medical benefits, that may also be considered as part of the **domestic relations action**.

To the extent that the guidance in this standard may conflict with ASOPs of a more general nature, this standard will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for relevant assignments for which the actuary is first engaged on or after December 1, 2015.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Valuation**—The determination, as of a **measurement date**, of the actuarial present value of a **retirement plan** benefit and any related benefits.
- 2.2 **Age- or Service-Dependent Benefits**—Benefits for which the amount or timing of benefit payments depends on the **covered party**'s age or length of service.
- 2.3 **Allocation Date**—The date through which the **retirement plan** benefits are deemed attributable to the marriage. Generally, this is the last day of the **allocation period**.
- 2.4 **Allocation Method**—A method used to determine the portion of **retirement plan** benefits that is included in **marital property**.
- 2.5 **Allocation of Retirement Plan Benefits**—The division of **retirement plan** benefits into two or more portions: a portion that is fully considered to be **marital property** and a portion that is not **marital property**, and perhaps a portion that is determined to be partially **marital property**.
- 2.6 **Allocation Period**—The period over which the **retirement plan** benefits deemed attributable to the marriage are determined. The period typically starts from the date of marriage or, if later, the hire date or plan entry date. The period typically ends at the date of marital separation, the date of court order formally ending the marriage, or the date of separation from service or actual retirement.
- 2.7 **Covered Party**—The party in a **domestic relations action** who is covered by the **retirement plan**.
- 2.8 **Direct User**—A present or prospective client or employer who has the opportunity to select the actuary and is able to communicate directly with the actuary about the actuary's qualifications, work, or recommendations.
- 2.9 **Domestic Relations Action**—Prenuptial, postnuptial, separation, divorce, and support agreements, and other domestic relations proceedings.
- 2.10 **Domestic Relations Law**—Federal, state, and local statutes, regulations, case law, and other binding authority that may govern the **domestic relations action**, the **retirement plan** or plans, or any other aspect of the actuary's engagement.
- 2.11 **Domestic Relations Order**—A court order dividing **retirement plan** benefits between the **covered party** and **spouse**, or a proposed court order for such purpose.

- 2.12 **Judge**—The judicial officer presiding over a **domestic relations action**, or an arbitrator, mediator, or special master acting in a similar adjudicatory capacity.
- 2.13 **Marital Property**—Assets of the marital estate as determined under the laws and regulations of the applicable jurisdiction.
- 2.14 **Measurement Date**—The date as of which the actuarial present value is determined. The **measurement date** may be different from the **allocation date**.
- 2.15 **Retirement Plan**—An employment-related arrangement for determining the amount and timing of retirement benefit payments, eligibility for benefits, etc. A **retirement plan** may be a defined benefit pension plan, a defined contribution plan, or a hybrid plan with both defined benefit and defined contribution elements.
- 2.16 **Spouse**—A party to the **domestic relations action** who is not the **covered party**. Normally, the term refers to the current **spouse** or former **spouse** of the **covered party**, but may on occasion refer to a child (or children) or other party to the **domestic relations action**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—Section 3 provides specific guidance for actuaries who undertake one or more of the following tasks in connection with a **domestic relations action**: performing an **actuarial valuation** and preparing the related report (section 3.3); participating in adversarial proceedings (section 3.4); providing guidance on the division of **retirement plan** benefits (section 3.5); assisting in drafting a **domestic relations order** (section 3.6); and assisting in reviewing or implementing a **domestic relations order** (section 3.7).
- 3.2 **Initial Considerations**—When undertaking an assignment concerning **retirement plan** benefits in a **domestic relations action**, the actuary should do the following:
- 3.2.1 **Identify the Client**—One or more of the following parties may select the actuary and shall be deemed to be the actuary's client for purposes of this standard:
- a. the **covered party** or his or her attorney;
 - b. the **spouse**, other interested party, or his or her attorney;
 - c. the **judge** presiding over the **domestic relations action**;
 - d. the court overseeing the **domestic relations action**; or
 - e. a **retirement plan** sponsor, administrator, or trustee.

- 3.2.2 **Disclose Any Conflicts of Interest**—The actuary should be alert to the possibility of a conflict of interest and should disclose any actual or potential conflict of interest to all known **direct users**. A conflict of interest exists whenever the actuary’s objectivity, or duty owed to a client or employer, is impaired by competing interests. A potential conflict of interest exists whenever it reasonably appears that the actuary’s objectivity, or duty owed to a client or employer, may be impaired by competing interests. For example, a potential conflict of interest exists when the **retirement plan**’s actuary is retained by the **covered party**, **spouse**, **judge**, or court. Similarly, a potential conflict of interest exists when the actuary has previously performed professional services for or has a personal relationship with the opposing attorney or any other party to the **domestic relations action**. In these matters, the actuary should be guided by the *Code of Professional Conduct*, Precept 7, Conflict of Interest.
- 3.2.3 **Determine the Nature and Scope of the Engagement**—The actuary should make certain that he or she has a clear understanding of the scope of the actuary’s engagement, and that the scope of the engagement is clearly communicated to the client. For example, if the **retirement plan** has retained the actuary to calculate the **covered party**’s benefit amounts at various dates—as distinguished from being retained on behalf of the **covered party** or **spouse** to value the benefit—then the actuary’s communication and underlying work product should so indicate. The engagement may include one or more of the following:
- a. calculating the **covered party**’s accrued or projected benefit at various dates;
 - b. selecting an **allocation method**;
 - c. selecting actuarial assumptions;
 - d. performing an **actuarial valuation of retirement plan** benefits;
 - e. participating in adversarial proceedings, including reviewing the work of another expert in the **domestic relations action**, participating in negotiations with another expert, assisting with the attorney’s case preparation, and providing expert testimony as to the actuary’s opinion of the value or appropriate **allocation of retirement plan benefits**;
 - f. providing information on the division of **retirement plan** benefits;
 - g. assisting in drafting a **domestic relations order** that will accomplish a division of **retirement plan** benefits, including providing sample documents; or
 - h. assisting the plan sponsor or administrator in reviewing or implementing a **domestic relations order**, including interpreting the provisions of the

domestic relations order or providing actuarial advice as to whether a **domestic relations order** provides for definitely determinable benefits permitted by the **retirement plan**.

- 3.2.4 **Avoid the Unauthorized Practice of Law**—The actuary should avoid the unauthorized practice of law. The actuary may rely upon the legal expertise of counsel or the court itself. The actuary should not provide advice in areas in which the actuary is not qualified.

For example, normally it would be inappropriate for the actuary to advise a non-attorney whether a **domestic relations order** meets applicable procedural requirements to be a valid **domestic relations order** in the jurisdiction. It would, however, be appropriate for the actuary to advise whether the benefits provided by the **domestic relations order** are permitted by the **retirement plan** and whether each party's benefit is definitely determinable from the **domestic relations order**.

- 3.2.5 **Be Familiar with Domestic Relations Law**—The actuary should have a general familiarity with **domestic relations law** that affects the actuary's work product or opinion. If a conflict exists between this standard and **domestic relations law**, compliance with **domestic relations law** is not considered to be a deviation from this standard.

- 3.3 **Actuarial Valuation**—An **actuarial valuation** is required to determine the value of benefits payable from a defined benefit pension plan that may be included in **marital property**. Defined contribution plans have individual account balances and usually do not require an **actuarial valuation**. However, an **actuarial valuation** may be required for a defined contribution plan if the time or form of benefit payment is restricted or the benefits are not yet fully vested. The goal of performing an **actuarial valuation** is to provide a reasonable assessment of the value of **retirement plan** benefits that are **marital property**. While an **actuarial valuation** may be used in drafting a **domestic relations order**, this section does not apply to reviewing or implementing a **domestic relations order** (see section 3.7).

To prepare an **actuarial valuation**, the actuary should do the following: identify and collect the information required to determine the **covered party's retirement plan** benefits; determine the **measurement date**; if applicable, select an **allocation method**, unless prescribed; select nonprescribed actuarial assumptions; and perform the computations. Each of these steps is described in more detail below.

- 3.3.1 **Information Requirements**—The actuary is responsible for identifying and collecting the information necessary for the **actuarial valuation**. Such information will typically include the following:

- a. the identity of the **retirement plan(s)** relevant to the engagement and each **retirement plan's** circumstances—such as ongoing, frozen, or terminated; qualified, nonqualified, or governmental;
- b. relevant **retirement plan** provisions—including benefit formulas, eligibility for participation and for benefit entitlement, ancillary benefits, early retirement subsidies, and optional forms of payment;
- c. **covered party** and **spouse** information—such as employment and plan participation status (active, terminated, vested, disabled, retired); compensation history; dates of birth, hire, plan participation, marriage, separation, or other relevant dates; accrued **retirement plan** benefits or data necessary for the calculation of accrued benefits; prior **domestic relations orders**; and any special circumstances that might materially affect the valuation results; and
- d. **allocation date** and **allocation period**.

The actuary may rely on information supplied by the attorney, plan sponsor, plan administrator, **covered party**, **spouse**, or plan record keeper, but the actuary is responsible for reviewing, when practicable, the reasonableness of the applicable data.

3.3.2 **Determining the Measurement Date**—In many instances, the **measurement date** is prescribed. When the **measurement date** is selected by the actuary, such date should be reasonable for the purpose of the measurement.

3.3.3 **Selecting an Allocation Method**—When selecting an **allocation method** for an **actuarial valuation** of **retirement plan** benefits in a **domestic relations action**, the actuary should take into account limitations imposed by **domestic relations law** and the relevant facts and circumstances. The acceptability of a given **allocation method** may depend on the legal jurisdiction applicable to the parties involved in the action. The following provides the actuary additional guidance regarding the selection of an **allocation method**.

a. Direct Tracing and Fractional Rule Methods—Where not restricted by **domestic relations law**, either of the following two types of methods may be used:

1. Direct Tracing—The portion of the retirement benefit that is **marital property** is equal to the actual benefit accrued during the **allocation period**. For example, in applying direct tracing to a defined benefit pension plan, the portion of the retirement benefit included in **marital property** could be the increase from the accrued benefit, if any, at the marriage date to the accrued benefit at the **allocation date**.

2. Fractional Rule—The retirement benefit is allocated by multiplying the retirement benefit by a fraction. The numerator and denominator of the fraction may be based on compensation, contributions, benefit accrual service, plan participation, employment, or other relevant data that are used directly in the determination of the accrued benefit. The numerator is equal to the selected measure accrued during the **allocation period**. The denominator is equal to the selected measure accrued during the total period in which the benefit is earned. When the selected measure is an elapsed time period, this method is commonly referred to as the *time rule*.

Illustrations of the calculations involved in the above two methods are included in appendix 1. Variations of these basic methods exist.

- b. Age- or Service-Dependent Benefits—if the **covered party** has not satisfied the applicable age or service conditions for certain benefits provided in the **retirement plan** but remains employed by the plan sponsor at the **allocation date**, the actuary should determine how to allocate the **age- or service-dependent benefit**. Unless otherwise required by **domestic relations law**, acceptable approaches include the immediate termination approach, which values the benefit as if the **covered party** terminated on the **allocation date**; and the continued employment approach, which reflects continued covered employment in accordance with selected retirement, turnover, mortality, or disability assumptions.
 - c. Different Results from Different Methods—Different types of **allocation methods** can produce significantly different results. An actuary working in situations where different methods might, in the actuary's professional judgment, be appropriate should inform the client as to the implications of the method used as compared to other methods, including the general financial impact of each method.
- 3.3.4 **Actuarial Assumptions**—When selecting assumptions for an **actuarial valuation** of **retirement plan** benefits in a **domestic relations action**, the actuary should take into account limitations imposed by **domestic relations law** and the facts and circumstances of the valuation, including each relevant **retirement plan**'s circumstances and provisions; information about the **covered party** and spouse (see section 3.3.1); and past experience and future expectations for the group of which the **covered party** is a member.

Each assumption selected by the actuary should be individually reasonable and consistent with the other assumptions selected by the actuary, in accordance with ASOP Nos. 27, *Selection of Economic Assumptions for Measuring Pension*

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Obligations, and 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations.

The following sections (a–k) describe assumptions commonly used in valuing **retirement plan** benefits and factors that the actuary should take into account in selecting assumptions for valuing such benefits in **domestic relations actions**. This list is not intended to be all-inclusive; additional assumptions may be required depending on the provisions of the **retirement plan** being valued, specific circumstances of the **covered party** or **spouse**, and unique requirements of the jurisdiction.

- a. Discount Rate—Unless another assumption is clearly warranted by the facts and circumstances, the discount rate selected for valuing **retirement plan** benefits in **domestic relations actions** should be a low-risk rate of investment return, determined as of the **measurement date** and based on the cash-flow pattern of benefits being valued (for example, the current or a recent average yield to maturity on U.S. Treasury bonds of comparable duration, or a published index reflecting yield rates for high-quality corporate bonds).
- b. Mortality and Mortality Improvement Assumption—Unless another assumption is clearly warranted by the facts and circumstances, the actuary should select a mortality table with adjustments to reflect expected mortality improvement before and after the **measurement date** that, in the actuary’s professional judgment, reasonably reflects the expected mortality experience of similarly situated individuals. For example, assuming a 100% probability of death at a single age and zero at all other ages is not an appropriate assumption. In some cases it may be appropriate to reflect the health of the **covered party** or **spouse** in the selection of the assumption.
- c. Annuity Purchase—As an alternative to selecting a discount rate under section (a) and a mortality assumption under section (b), the actuary may assume the cost of the purchase of an immediate or deferred annuity contract with appropriate benefit features from an insurance carrier. This may be done by using an actual insurance survey or by reference to published tables that are derived from such surveys.
- d. Retirement Assumption—The retirement assumption may be a single assumed retirement age or a table of retirement rates by age. The retirement assumption should reflect the applicable facts and circumstances, such as the following:
 1. the **retirement plan**’s normal retirement age;

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2. the ages at which the **covered party** is first eligible to retire, to receive subsidized early **retirement plan** benefits, to receive unreduced **retirement plan** benefits, to receive Social Security benefits, and to receive Medicare benefits;
3. plan participants' average retirement age and retirement rates by age (if known to the actuary), or norms as to retirement age in the **covered party's** industry or profession;
4. the availability of medical and other postretirement plan benefits;
5. the level of total **retirement plan** benefits; or
6. the **covered party's** income level, job position, and family circumstances.

Statements made by the **covered party** or **spouse** as to anticipated retirement age may also be considered, but should not be given undue weight because such statements may be self-serving and the **domestic relations action** itself may alter retirement planning decisions.

- e. Cost-of-Living Adjustments—if the **retirement plan** automatically adjusts benefits for increases in the cost of living, the **actuarial valuation** should generally reflect expected future increases in benefits attributable to such cost-of-living adjustments. In some cases, it may be appropriate to make an assumption about future ad hoc cost-of-living adjustments.
- f. Disability Assumption—a disability assumption is generally not applicable unless facts and circumstances clearly warrant it. A disability assumption may be used if the **retirement plan** provides special benefits upon disability and if including a disability assumption would materially affect the valuation results. A disability table that is generally accepted for use in valuing annuities or pension benefits, or a table that reflects the expected disability experience of plan participants, is generally appropriate. However, in some cases it may be appropriate to adjust the disability assumption to reflect the health of the **covered party**.
- g. Turnover Assumption—an assumption as to the rate of participant termination may be required if the benefit is not yet vested or the benefit amount depends on future service. However, some jurisdictions permit only involuntary termination to be reflected when valuing **retirement plan** benefits in **domestic relations actions**. The turnover assumption should reflect the specific facts and circumstances, such as the following:
 1. the actual or expected turnover experience of plan participants (if known to the actuary);

2. the **covered party's** age and service;
 3. the **covered party's** job position; and
 4. **retirement plan** provisions such as the age and service required to receive subsidized early **retirement plan** benefits.
- h. Compensation Increase—While it is common for the **actuarial valuation** of **retirement plan** benefits in **domestic relations actions** to reflect compensation through the **allocation date** only, some methods, and some jurisdictions, require the actuary to consider future levels of compensation. The actuary should determine whether future levels of compensation are appropriate for the calculation.
- i. Growth of Individual Account Balances—Some **retirement plan** benefits have components directly related to the accumulation of real or hypothetical individual account balances (including defined contribution plans, floor-offset arrangements, and cash balance pension plans). An assumption regarding the future investment return earned by the actual or hypothetical accounts may be required to value benefits under such plans. This assumed rate of investment return should equal the discount rate unless, in the actuary's professional judgment, another assumption is more appropriate.
- j. Form of Payment—The actuary should take into account the degree to which particular forms of payment may be subsidized and requirements or restrictions of the **domestic relations action** as to form of payment that may be selected by the participant. The actuary may also consider statements made by the **covered party** or **spouse** as to the form of payment that will be selected.
- k. Variable Conversion Factors—Valuing certain **retirement plan** benefits may require converting from one payment form to another, such as converting a projected individual account to an annuity or converting an annuity to a lump sum. If the conversion basis is variable (for example, using mortality tables and interest rates that are updated regularly), an assumption regarding future conversion rates may be required.
- 3.3.5 Valuation Process—When performing an **actuarial valuation**, the actuary should do the following:
- a. identify the **measurement date**, the **allocation date**, the **allocation period**, potential **retirement plan** benefits, the contingencies that may affect payment of those benefits, and any special requirements of the applicable legal jurisdiction;

- b. project the timing and amounts of potential benefit payments, applying the selected or prescribed **allocation method** and applicable economic assumptions, and assuming that any required contingencies are met;
- c. calculate expected payments by multiplying each potential benefit payment determined in section (b) by the probability that the required contingencies are met, and applying the selected or prescribed demographic and other assumptions; and
- d. discount each expected benefit payment to the **measurement date**, using the selected or prescribed discount rate.

The actuary should not determine a life expectancy from the chosen mortality table and then compute the value of an annuity certain for a term equal to that life expectancy, as it may produce materially inaccurate results.

- 3.3.6 **Computing After-Tax Values**—In some cases, the actuary may be asked for an opinion of the “after-tax” actuarial present value of **retirement plan** benefits. If the actuary has sufficient training or experience, the actuary may prepare such calculations even though the actuary may not be a credentialed tax practitioner. Responding to such requests will generally involve making a number of additional assumptions, such as the potential rate of taxation of **retirement plan** benefit payments and the tax rate applicable to investment returns.
- 3.3.7 **Dates, Methods, and Assumptions**—**Domestic relations law** may specify or restrict the **measurement date**, the **allocation date**, the **allocation method**, some or all of the actuarial assumptions, or the process the actuary should use to select the **measurement date**, **allocation date**, **allocation method**, or actuarial assumptions. In other situations, the parties to the **domestic relations action** may stipulate or request the use of alternative **measurement dates**, **allocation dates**, **allocation methods**, some or all assumptions, or the selection process. In such jurisdictions or situations, the actuary should use the prescribed **measurement date**, **allocation date**, **allocation method**, actuarial assumptions, or selection process. Each nonprescribed date, method, and assumption selected by the actuary should be reasonable and consistent with every other nonprescribed assumption selected by the actuary. The actuary may also choose to present results using dates, methods, and assumptions that, in the actuary’s professional judgment, are appropriate for the given calculation, in addition to providing the results using the prescribed dates, methods, and assumptions.
- 3.3.8 **Consistency with the Actuary’s Previous Actuarial Valuations**—The **actuarial valuation** should be reasonable and appropriate for the assignment. Unless the dates, methods, or assumptions are prescribed, or the facts and circumstances of the assignment dictate otherwise, the actuary should generally use the same process to select dates, methods, or assumptions for all **actuarial valuations** in

the same jurisdiction. Even though the actuary may be acting as an advocate for the client in performing an **actuarial valuation**, the actuary should not select dates, methods, or assumptions outside the range of dates, methods, or assumptions that the actuary would ordinarily use solely to accommodate the litigation position of the actuary’s client. If the actuary changes the selection process, the actuary should be prepared to explain the change from the actuary’s previous selection process in the same jurisdiction.

3.4 **Participating in Adversarial Proceedings**—When participating in adversarial proceedings, the actuary’s responsibilities may include the following:

3.4.1 **Reviewing the Work of Another Expert**—The actuary participating in adversarial actions may be asked to review the work of another expert. The actuary should conduct this review objectively, in terms of the reasonableness of the other expert’s opinion, rather than solely in terms of whether it agrees with the actuary’s own opinion. In reviewing another expert’s work, the actuary should generally follow the steps below:

- a. review the basic facts of the situation used by the other expert (see section 3.3.1);
- b. review the **measurement date**, **allocation method**, and actuarial assumptions used;
- c. determine whether any material computational errors have occurred;
- d. summarize the findings with respect to sections (a), (b), and (c) that would have a significant impact on the valuation results; and
- e. report these findings to the client, including the actuary’s assessment of the reasonableness of the other expert’s opinion.

The actuary should be aware that the parties may use these findings to form an opinion on whether to litigate or settle the issue of retirement values, and should therefore strive neither to minimize legitimate differences of opinion nor to magnify immaterial differences.

3.4.2 **Submitting Work for Review by Another Expert**—The actuary participating in adversarial actions may be asked to submit work for review by another expert. The actuary should not submit work for review without the express consent of the client or the client’s authorized representative. The actuary should request guidance from the client as to the scope of material that may be disclosed. To the extent authorized, the actuary should be prepared to disclose the type of information described in section 3.4.1. Any authorized contact should be conducted in accordance with the *Code of Professional Conduct*, Precept 10, Courtesy and Cooperation.

3.4.3 **Participating in Negotiations with Another Expert**—The actuary may be asked to participate in negotiations with another expert to identify any differences (see section 3.4.1), and, possibly, to settle on a compromise value to which the parties can stipulate, thus avoiding litigation costs. In such case, the actuary should request guidance from the client as to the scope of the actuary’s negotiating authority and the scope of material that may be disclosed. The result of such negotiation with another expert might be a suggested stipulation or a list of issues that remain unresolved.

3.4.4 **Providing Expert Testimony**—The actuary participating in adversarial proceedings may be asked to provide expert testimony. The actuary undertaking such an engagement should be familiar with, and comply with, all relevant actuarial standards of practice, including ASOP No. 17, *Expert Testimony by Actuaries*. Before providing expert testimony, the actuary should review data, materials, and documents that are relevant to the subject on which the actuary is expected to testify.

When testifying as to the differences between the actuary’s opinion and another expert’s opinion, the actuary should do so factually. For example, such testimony may take the following forms:

- a. showing that data currently available call into question a key assumption, method, or conclusion of the other expert;
- b. showing that the two conclusions do not conflict as much as they appear to, or that the difference is not material;
- c. showing what kinds of data may become available in the future to support one or the other set of assumptions or conclusions; or
- d. showing the effects of different dates, methods, or assumptions.

3.5 **Providing Guidance on the Division of Retirement Plan Benefits**—The actuary may be retained by an attorney or the court to provide guidance on alternative methods available for the division of **retirement plan** benefits between the **covered party** and **spouse**. In this situation, the actuary should be generally knowledgeable about (1) methods for the division of **retirement plan** benefits that are available in the jurisdiction; and (2) the types of **domestic relations orders** available for the division of **retirement plan** benefits under each **retirement plan** considered in the **domestic relations action**, and the differences between these various types of **domestic relations orders** (see appendix 1 for a discussion of the types of **domestic relations orders** available).

3.6 **Assisting in Drafting a Domestic Relations Order**—When **retirement plan** benefits are to be directly divided or assigned by **domestic relations order**, the actuary may be retained to assist in drafting a **domestic relations order** that will accomplish the desired

division of **retirement plan** benefits. Such assistance may include providing sample documents and calculating benefits payable under different payment schemes.

The actuary assisting in drafting a **domestic relations order** should take into account early retirement subsidies and ancillary benefits available under the **retirement plan** as appropriate and should recommend that the proposed language unambiguously define the benefit amount payable to each party and that relevant contingent events, such as the **covered party's** death before retirement or the **covered party's** retirement after becoming eligible for subsidized early **retirement plan** benefits, be appropriately considered.

- 3.7 **Assisting in Reviewing or Implementing a Domestic Relations Order**—When **retirement plan** benefits are to be directly divided or assigned by **domestic relations order**, the actuary may be retained by the plan sponsor or administrator to assist in reviewing or implementing the **domestic relations order**, as described below. Services provided by the actuary may include interpreting the provisions of the **domestic relations order** or advising whether the benefits provided by the **domestic relations order** are permitted by the **retirement plan** and whether each party's benefit is definitely determinable from the **domestic relations order**.

- 3.7.1 **Assisting in Reviewing a Domestic Relations Order**—The actuary's communication of a review of a **domestic relations order** should state the scope of such review. For example, the actuary could indicate that the review is limited to an examination of the technical content of the **domestic relations order** and does not extend to the legal form of the **domestic relations order**. If the **domestic relations order** has substantive conflicts with the provisions or administrative procedures of the **retirement plan**, or the benefits are not definitely determinable, then the actuary should explain the conflicts and why the **domestic relations order** is not administratively feasible as written.

To be a qualified **domestic relations order**, a **domestic relations order** must satisfy the qualification requirements of IRC section 414(p) and ERISA section 206(d). One of the requirements is that the division of **retirement plan** benefits must be pursuant to a judgment, decree, or order under the **domestic relations law** of a state. If the **domestic relations order** being reviewed fails to meet the procedural requirements of the court, it may not be a valid **domestic relations order**. The question of whether the proposed **domestic relations order** meets the state's procedural requirements is a legal one and is beyond the qualifications of actuaries who are not also attorneys.

- 3.7.2 **Assisting in Implementing a Domestic Relations Order**—The plan sponsor or administrator responsible for implementing a **domestic relations order** may retain the actuary to determine the benefit amount payable to the **spouse** or **covered party** in the various forms of payment available under the provisions of the **retirement plan**, the **domestic relations order**, and other governing document(s). This may include determining the amount of actuarially equivalent

optional forms of payment in accordance with the **retirement plan** provisions (including the **retirement plan's** definition of actuarial equivalence) and any relevant **domestic relations law**. If the terms of the **domestic relations order** or **retirement plan** are ambiguous, if the **retirement plan** is silent, or if the **domestic relations order** and **retirement plan** conflict, the actuary may provide a good faith interpretation of the **domestic relations order** in light of the provisions and administrative procedures of the **retirement plan**. Such interpretation should be disclosed, and the disclosure should include an explanation of the ambiguities or conflict.

Section 4. Communications and Disclosures

- 4.1 **Audience**—In reporting the results of the actuary’s work, the actuary should take into account the background of the likely audience and should explain technical terms and concepts so that they can be understood by the likely audience. For example, a report made to an attorney experienced in the measurement, allocation, and division of **retirement plan** benefits in **domestic relations actions** might presuppose more actuarial knowledge than a report that is to be made part of the court record.
- 4.2 **Conflict of Interest**—The actuary should make full disclosure of any actual or potential conflict of interest to all known **direct users**. Such disclosure should generally occur before the actuary accepts the engagement or as soon as practicable after the date the actuary learns of the actual or potential conflict of interest, if later.
- 4.3 **General Disclosures**—Any communication of actuarial findings, conclusions, or recommendations concerning **retirement plan** benefits in **domestic relations actions** should comply with the requirements of ASOP Nos. 23, *Data Quality*, 27, 35, and 41, *Actuarial Communications*, and should include at least the following:
 - a. the name of the actuary responsible for the communication;
 - b. the identity of the client who has retained the actuary to provide services in connection with the **domestic relations action** and the identities of the parties to the **domestic relations action**;
 - c. a description of the actuary’s role and the nature and scope of the actuary’s engagement, including the scope of any statement of actuarial opinion;
 - d. the name of the **retirement plan** and a summary of key provisions or other relevant **retirement plan** information affecting the measurement, allocation, or division of the **retirement plan** benefit;
 - e. the name of the legal jurisdiction assumed to govern the **domestic relations action**, if relevant to the actuary’s advice;

- f. the **covered party** and **spouse** information that the actuary used when performing the services;
- g. the source of any information supplied by others and the extent of the actuary's reliance on that information;
- h. any data deficiencies known to the actuary that might materially affect the results, opinion, or advice being communicated;
- i. a statement of the findings, conclusions, or recommendations necessary to satisfy the purpose of the communication and a summary of the actuarial determinations upon which these are based;
- j. any facts known to the actuary that, if not disclosed, might reasonably be expected to lead to a materially incomplete understanding of the communication;
- k. any disclosures required under section 3.7 when the actuary assists in reviewing or implementing a **domestic relations order**;
- l. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by **domestic relations law**;
- m. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- n. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.4 **Actuarial Valuation Results**—In addition to the items described in section 4.3, the actuary's communication of **actuarial valuation** results should include at least the following information:

- a. the **measurement date**;
- b. a description of the **allocation method**, including the **allocation date** and **allocation period**; a description of the benefit being allocated (for example, the vested accrued benefit, the accrued benefit, the employer-provided benefit, or projected **retirement plan** benefits); a description of the allocation procedure and the unit of measure (for example, fractional rule, based on years of employment); a description of the allocation of **age- or service-dependent benefits**; and a description of any adjustments made to reflect limits on benefit accruals or varying benefit accrual rates under the benefit formula;

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a brief description of the rationale for the selection of the **allocation method** and the general effects of the method in words or numerical data as appropriate, if the actuary selects the **allocation method** or provides advice on the selection of the **allocation method**;

if applicable, a statement that the **allocation method** is not stated in the law of the jurisdiction of the parties;

- c. a description of the benefits being valued (including applicable ancillary benefits) and any significant benefits of which the actuary has knowledge that are not included in the **actuarial valuation**;
- d. a description of each actuarial assumption and a brief description of the rationale for the selection of each significant assumption that is not prescribed; and
- e. the source of any prescribed **measurement date**, **allocation date**, **allocation method**, actuarial assumption, selection process, or other prescribed item that has a material effect upon the **actuarial valuation** results.

4.5 **Confidential Information**—Nothing in this standard is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Measurement of Retirement Plan Benefits in Domestic Relations Actions

State statutes governing domestic relations actions generally take one of three approaches to the division of marital property:

1. Under the common-law approach, any particular asset is generally awarded to the party who contributed the asset to the marriage. In the case of retirement plan benefits, the entire retirement plan benefit is generally awarded to the covered party. Thus, there is generally no need for an actuarial valuation of the retirement plan benefit in a common-law state.
2. Under the community-property approach, all assets accumulated during the marriage are subject to division between the parties. This approach may require a monetary value to be placed on retirement plan benefits.
3. The equitable-distribution approach is a less rigid approach that gives some weight to assets contributed to the marriage and some weight to other criteria, such as the length of the marriage. This approach may require a monetary value to be placed on retirement plan benefits.

In general, allocation methods used to determine the portion of the benefit payments that is marital property may be characterized as either direct tracing methods or fractional rule methods, as described in section 3.3.3 and illustrated below. In many jurisdictions, the allocation date and method have been established by domestic relations law; in others there is no legally prescribed approach, and the allocation date or method may be an issue in the domestic relations action.

In some jurisdictions, domestic relations law prescribes the measurement date and certain actuarial assumptions, such as the discount rate, mortality table, and retirement assumption. Similarly, domestic relations law may prohibit the use of certain types of actuarial assumptions, such as a compensation scale or voluntary turnover assumption. In some jurisdictions, the process the actuary must use to select the assumptions is prescribed; for example, the actuary might be required to assume that retirement occurs at the age at which the retirement plan benefit is most valuable. In other jurisdictions, there are no legally prescribed or prohibited actuarial assumptions, measurement dates, or selection methods.

Because of the widely divergent approaches prescribed by or available in different jurisdictions, it is clear that there can be no uniform national approach to the actuarial valuation of retirement plan benefits. In many parts of the country, the law in this field is still evolving, while elsewhere

there are governing statutes or a substantial body of established precedent. Where choice of method or assumption is allowed by law, a wide difference can exist between the values computed by different actuaries—a difference that may be attributable not to errors on the part of either actuary, but to legitimate differences of opinion as to the appropriate measurement date, allocation date, allocation method, or actuarial assumptions.

Division of Retirement Plan Benefits in Domestic Relations Actions

Alternative methods for the division of retirement plan benefits that are marital property may include the award of the retirement plan benefits to one party, with other marital property awarded to the other party, as well as the direct division of the retirement plan benefits of either party by an appropriate domestic relations order.

The types of domestic relations orders available may include the following:

1. a qualified domestic relations order for a retirement plan covered by ERISA;
2. a qualifying court order for a federal government retirement plan, such as the Civil Service Retirement System, the Federal Employees' Retirement System, the Federal Thrift Savings Plan, and military retirement systems;
3. a court order mandated by local law for the division of retirement plan benefits earned under a retirement plan sponsored by a state, county, municipality, school district, or other governmental entity; or
4. a court order dividing benefits earned under a nonqualified retirement plan.

For certain types of retirement plans, there may be no provision in the law to permit division or assignment by court order.

Illustrations of Allocation Methods

Basic Information

The plan provides a retirement plan benefit equal to 1% of the final year's compensation multiplied by years of service. Accrued benefits vest after 5 years of service, and participants are eligible to retire early at age 55 if they have completed 10 years of service. Normal retirement is at age 65. The covered party joined the plan at age 25, was married at age 29, and is age 40 at the allocation date. The covered party's historical service, compensation, accrued benefit, and vested accrued benefit are shown in the following table.

Age	Completed Years of Service	Prior Plan Year's Compensation	Accrued Benefit	Vested Accrued Benefit
26	1	\$11,500	115	0
27	2	\$12,500	250	0
28	3	\$14,000	420	0
29	4	\$14,500	580	0
30	5	\$15,000	750	750
31	6	\$15,500	930	930
32	7	\$16,750	1,173	1,173
33	8	\$18,000	1,440	1,440
34	9	\$19,000	1,710	1,710
35	10	\$20,000	2,000	2,000
36	11	\$23,500	2,585	2,585
37	12	\$25,000	3,000	3,000
38	13	\$27,500	3,575	3,575
39	14	\$29,000	4,060	4,060
40	15	\$33,000	4,950	4,950

Direct Tracing Allocation Method

In the direct tracing method, the portion of the retirement plan benefit that is often considered to be marital property is equal to the actual benefit accrued during the allocation period (typically the period from the date of marriage to the allocation date). For example, in applying direct tracing to a defined benefit pension plan, the portion of the retirement plan benefit included in marital property would generally be the increase from the accrued benefit, if any, at the marriage date to the accrued benefit at the allocation date. If the direct tracing method were applied to the data given in the table above, subtracting the \$580 accrued benefit at the date of marriage from the \$4,950 accrued benefit at the allocation date would give the portion of the accrued benefit that is marital property: \$4,370.

Alternatively, the direct tracing method could be applied to the covered party's vested accrued benefit. Under this approach, the entire \$4,950 is marital property because the vested accrued benefit was \$0 at the date of marriage.

Fractional Rule Allocation Method

The fractional rule method allocates the retirement plan benefit by multiplying the retirement plan benefit by a fraction. The fraction may be based on compensation, contributions, benefit accrual service, plan participation, employment, or other relevant historical data. The numerator is equal to the selected measure accrued during the allocation period (typically the period from the date of marriage to the allocation date). The denominator is equal to the selected measure accrued during the total period in which the retirement plan benefit is earned. When the selected measure is an elapsed time period, this method is commonly referred to as the “time rule.”

If the fractional rule method based on benefit accrual service were applied to the data in the table above, the \$4,950 accrued benefit at the allocation date would be multiplied by the fraction ($11 \div 15$) because the covered party was married for 11 of the 15 years over which the benefit was accrued. The portion of the accrued benefit that is marital property is \$3,630.

If the fractional rule method were based on compensation instead, the numerator of the fraction would be compensation earned from the date of marriage to the allocation date (\$242,250), and the denominator would be the covered party’s total compensation earned from employment date to the allocation date (\$294,750).

When the \$4,950 accrued benefit is multiplied by the fraction ($\$242,250 \div \$294,750$), the portion of the accrued benefit that is considered to be marital property is \$4,068.

Allocation Method for Age- or Service-Dependent Benefits

Under both the direct tracing and fractional rule allocation methods, the allocation of age- or service-dependent benefits needs to be defined. Age- or service-dependent benefits are benefits for which the amount or timing of benefit payments depends on the covered party’s age or length of service. Subsidized early retirement plan benefits are often age- or service-dependent. For example, a retirement plan might provide that the benefit payable upon early retirement at age 55 is 100% of the accrued benefit if the participant has completed at least 25 years of service, and 50% of the accrued benefit otherwise.

If the covered party has not satisfied the eligibility requirements at the allocation date but remains employed by the plan sponsor, alternative approaches are available. One approach would exclude from marital property any age- or service-dependent benefit that is available only if the covered party remains employed after the allocation date. A second approach would include such benefits in marital property under the assumption that the covered party will remain employed by the plan sponsor until eligibility conditions for the higher benefit level are satisfied. These two approaches may produce quite different results. Under the early retirement provision described above, including the value of the 25-years-of-service subsidy in marital property could double the value of the retirement plan benefit.

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As these examples illustrate, retirement plan benefits included in marital property can vary substantially depending on the allocation method used.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 34, *Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions*, was issued in September 2014 with a comment deadline of January 31, 2015. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” includes the Pension Committee and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested terms such as “users,” “direct users,” and “likely audience” need to be better explained and that, with respect to administration of a domestic relations order, the term “intended user” should be narrowly defined as the principal (generally the plan sponsor). This commentator also believed that with respect to actuarial valuations the term “intended user” should be broader.
Response	The reviewers believe the terminology in the ASOP is sufficiently clear and therefore made no change.
SECTION 2. DEFINITIONS	
Section 2.1, Actuarial Valuation	
Comment	One commentator suggested that the division of benefits under domestic relations orders should be specifically excluded from the definition of “actuarial valuation” so that the guidance applicable to actuarial valuations does not apply.
Response	The reviewers believe the guidance in the last sentence of the first paragraph of section 3.3 provides sufficient guidance regarding the application of the requirements of that section to reviewing or implementing a domestic relations order and, therefore, made no change.
Section 2.3, Allocation Date	
Comment	One commentator suggested changing the phrase “benefits earned during the marriage” to “benefits to be divided” as domestic relations orders can and often do allocate benefits that are earned outside the marriage period.
Response	The reviewers agree with the commentator’s concern and modified the language to refer to “benefits deemed attributable to the marriage.”

Section 2.6, Allocation Period	
Comment	One commentator suggested changing the phrase “benefits earned during the marriage” to “benefits to be divided” as domestic relations orders can and often do allocate benefits that are earned outside the marriage period.
Response	The reviewers agree with the commentator’s concern and modified the language to refer to “benefits deemed attributable to the marriage.”
Section 2.10, Domestic Relations Law	
Comment	One commentator suggested that prenuptial, postnuptial and other agreements may supersede domestic relations law and suggested that the phrase “other binding authority” be made more specific to encompass these agreements.
Response	The reviewers believe the existing language regarding other binding authority is sufficiently clear and therefore made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Overview	
Comment	One commentator found the term “court order” potentially confusing as the standard defines the term “domestic relations order.”
Response	The reviewers agree and modified the term “court order” to the defined term “domestic relations order” throughout the standard where appropriate.
Section 3.2.2, Disclose Any Conflicts of Interest	
Comment	One commentator suggested that the example in this section was neither appropriate nor clear and requested that it be deleted or at least modified.
Response	The reviewers agree and modified the example.
Section 3.3, Actuarial Valuation	
Comment	One commentator suggested that it is not always necessary for the actuary to select an allocation method.
Response	The reviewers agree and inserted “if applicable” before the requirement to select an allocation method.
Section 3.3.3(a), Direct Tracing and Fractional Rule Methods	
Comment	One commentator suggested that it would very often be inappropriate for an actuary to choose a method that allocated benefits based on the direct tracing approach applied to vested benefits.
Response	The reviewers agree and modified the language.
Section 3.3.4(c), Annuity Purchase	
Comment	One commentator suggested that the guidance should indicate that if an actuary were to use an annuity purchase price in the actuary’s valuation, the annuity purchase price should reflect the applicable benefit features.
Response	The reviewers agree and modified the language.
Section 3.3.4(h), Compensation Scale	
Comment	One commentator suggested that the example in this section was potentially misleading and suggested it be deleted.
Response	The reviewers agree and deleted the example. In addition, language was added to indicate the actuary should determine whether future levels of compensation are appropriate for the calculation.

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Section 3.3.4(i), Growth of Individual Account Balances	
Comment	One commentator suggested the requirement to use the discount rate as the assumption for future investment return unless another assumption is clearly warranted to be too prescriptive.
Response	The reviewers agree and modified the language to be less prescriptive.
Section 3.3.5, Valuation Process	
Comment	One commentator suggested deleting the last paragraph of this section. The commentator suggested that if this paragraph were not deleted, the language should be replaced to indicate that this “different result” be renamed as a false or incorrect result.
Response	The reviewers agree with the commentator’s concern and modified the language.
Section 3.3.8, Consistency with the Actuary’s Previous Actuarial Valuations	
Comment	One commentator suggested that this section be eliminated as its requirements are too restrictive. The commentator offered alternative language.
Response	The reviewers believe the existing language is not too restrictive and made no change.
Section 3.4.3, Participating in Negotiations with Another Expert	
Comment	One commentator suggested replacing the words “irreconcilable positions” with “unreconciled positions,” since the rest of the sentence in this section suggested that the positions will ultimately be resolved.
Response	The reviewers agree and modified the language.
Section 3.7, Assisting in Reviewing or Implementing a Domestic Relations Order	
Comment	One commentator suggested that this section should explicitly mention making sure the benefits are definitely determinable from the plan document and domestic relations order, and disclosing if they are not.
Response	The reviewers agree and modified the language.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.3, General Disclosures	
Comment	One commentator suggested a summary of plan provisions should not be required to be disclosed by the actuary when the actuary is doing a benefit calculation pursuant to a domestic relations order.
Response	The reviewers disagree and made no change.
Section 4.4, Actuarial Valuation Results	
Comment	One commentator suggested that “or source of allocated benefits” be inserted after “a description of the allocation method” in section 4.4(b). Another commentator suggested adding “if any” after “a description of the allocation method.”
Response	The reviewers believe the existing language is sufficiently clear and unambiguous and, therefore, made no change.
Comment	Two commentators suggested “the rationale” be replaced by “a rationale” in section 4.4(b).
Response	The reviewers disagree and made no change.
Comment	One commentator suggested that the wording in section 4.4(d) be changed to require “a brief description of” the rationale.
Response	The reviewers agree and modified the language in section 4.4(d) to require a brief description of the rationale.

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Comment	One commentator suggested that section 4.4(d) clearly indicate that rationale for assumptions need not be provided for domestic relations order calculations.
Response	The reviewers believe the guidance provided in section 3.3 is clear in this respect and made no change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 35**

Revised Edition

**Selection of Demographic and
Other Noneconomic Assumptions
for Measuring Pension Obligations**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2020**

Doc No. 198

ASOP No. 35—Doc. No. 198—June 2020

T A B L E O F C O N T E N T S

Transmittal Memorandum

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June 2020

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 35

This document contains a revision of ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*.

History of the Standard

The ASB provides guidance for measuring pension and retiree group benefit obligations through the series of ASOPs listed below.

1. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*;
2. ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*;
3. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
4. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;
5. ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*; and
6. ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

The last revision of ASOP No. 35 was issued in September 2014.

In response to specific requests for changes in the ASOPs and other activity related to public pension plans, in July 2014 the ASB issued a Request for Comments on the topic of ASOPs and Public Pension Plan Funding and Accounting. Over 50 comment letters were received covering a wide variety of potential ASB actions. In December 2014, the ASB formed the Pension Task Force and charged it with reviewing these comments and other relevant reports and input to

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develop recommendations for ASB next steps. In July 2015, the ASB held a public hearing on actuarial standards of practice applicable to actuarial work regarding public plans. The Pension Task Force provided its report to the ASB in February 2016. The report included suggestions for changes to the ASOPs that would apply to all areas of pension practice. In June 2016, the ASB directed its Pension Committee to draft appropriate modifications to the actuarial standards of practice, in accordance with ASB procedures, to implement the suggestions of the Pension Task Force. Draft revisions of ASOP Nos. 4, 27, and 35 were exposed for comment in March 2018 with a comment deadline of July 31, 2018.

First Exposure Draft

The first exposure draft was issued in March 2018 with a comment deadline of July 31, 2018. Sixteen comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft was issued in June 2019 with a comment deadline of September 15, 2019. Six comment letters were received and considered in making changes that are reflected in this revised ASOP.

Notable Changes from the Second Exposure Draft

Notable changes made to the second exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency within this ASOP and ASOP No. 27.

1. Section 3.4.3, Mortality, was modified to state that the actuary should consider using actual participant mortality data, to the extent fully or partially credible, or published and generally available mortality tables. In addition, the guidance was modified for consistency with section 4.1.2.
2. Section 3.11, Documentation, was revised to remove the requirement that when preparing documentation the actuary should prepare documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary.

Summary of Notable Changes from the Existing ASOP No. 35 Adopted September 2014

Notable changes from the existing ASOP No. 35 adopted September 2014 are summarized below.

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1. Section 1.2, Scope, was expanded to clarify the application of the standard when a demographic assumption is not selected by the actuary and whenever the actuary has an obligation to assess the reasonableness of a demographic assumption that the actuary has not selected.
2. Section 3.3.5 (now section 3.2.5), Select a Reasonable Assumption, was clarified to acknowledge that relevant historical data may not exist.
3. Section 3.5.3, Mortality and Mortality Improvement, (now section 3.4.3, Mortality, and section 3.4.4, Mortality Improvement) was clarified and expanded to provide additional guidance regarding the selection of mortality assumptions and the use of mortality tables that substantially predate the measurement date.
4. Section 3.8, Reviewing Assumptions (now section 3.7 Reviewing Assumptions Previously Selected by the Actuary), was amended to provide additional guidance regarding the reviewing of assumptions that the actuary previously selected.
5. Section 3.9, Phase-In of Changes in Assumptions, was added to provide guidance regarding the phase-in of changes in assumptions.
6. Section 3.9, Assumptions Not Selected by the Actuary (now section 3.8, Assessing Assumptions Not Selected by the Actuary), was modified to clarify the requirement that the actuary assess the reasonableness of each demographic assumption that the actuary has not selected.
7. Section 3.10.4, Combined Effect of Assumptions, was clarified to indicate that the combined effect of assumptions selected by the actuary should be expected to have no significant bias.
8. Section 3.10.6, Views of Experts, (now titled, Other Sources of Demographic Data and Analyses) was renamed and clarified to provide for use of other sources of demographic data and analyses.
9. Section 3.11, Documentation, was added to provide guidance regarding documentation.
10. Section 4.1.2, Rationale for Assumptions, was modified concerning the disclosure of the rationale for assumptions, was clarified concerning the application to planned assumption changes after the measurement date, and was clarified regarding disclosures for mortality assumptions.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

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The ASB also thanks its former Pension Committee members and, in particular, former Pension Committee Chairperson Christopher F. Noble for their contributions in the drafting of this standard.

The ASB voted in June 2020 to adopt this standard.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 35

**SELECTION OF DEMOGRAPHIC AND
OTHER NONECONOMIC ASSUMPTIONS FOR
MEASURING PENSION OBLIGATIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) does the following:
- a. provides guidance to actuaries when performing actuarial services that include selecting (including giving advice on selecting) demographic and other noneconomic assumptions for measuring obligations under defined benefit pension plans;
 - b. supplements the guidance in ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, that relates to the selection and use of demographic and other noneconomic assumptions;
 - c. supplements the guidance in ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*, that relates to the selection and use of demographic and other noneconomic assumptions; and
 - d. supplements the guidance in ASOP No. 34, *Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions*, that relates to the selection and use of demographic and other noneconomic assumptions.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services that include selecting demographic and all other assumptions not covered by ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, to measure obligations under any defined benefit pension plan that is not a social insurance program as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless ASOPs on social insurance explicitly call for application of this standard). Measurements of defined benefit pension plan obligations include calculations such as funding valuations or other assignment of plan costs to time periods, liability measurements or other actuarial present value calculations, and cash flow projections or other estimates of the magnitude of future plan

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obligations. Measurements of pension obligations do not generally include individual benefit calculations, individual benefit statement estimates, or nondiscrimination testing.

Throughout this standard, any reference to selecting demographic and other noneconomic assumptions also includes giving advice on selecting demographic and other noneconomic assumptions. For example, the actuary may provide advice on selecting demographic and noneconomic assumptions under US GAAP or Governmental Accounting Standards even though another party is ultimately responsible for selecting these assumptions. This standard applies to the actuarial advice given in such situations, within the constraints imposed by the relevant accounting standards.

As discussed in ASOP No. 41, *Actuarial Communications*, an assumption may be selected by the actuary or selected by another party. Nothing in this standard is intended to require the actuary to select a demographic or other noneconomic assumption that has otherwise been selected by another party. When a demographic or other noneconomic assumption is not selected by the actuary, the guidance in section 3.8 and section 4 concerning assessment and disclosure applies.

If the actuary determines that the guidance in this standard conflicts with ASOP Nos. 4 or 6, ASOP Nos. 4 or 6 will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any actuarial report that meets the following criteria: (a) the actuarial report is issued on or after August 1, 2021; and (b) the **measurement date** in the actuarial report is on or after August 1, 2021.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Assumption Format**—The form in which a particular **demographic assumption** will be used or expressed. In some cases, the assumption will take the form of a table where the probability of the occurrence of a given event depends on parameters such as gender, age, service, or calendar year. In other cases, the assumption may be a point estimate, implying 100% probability of occurrence of a given event at the stated point. An example of a point estimate assumption is an assumption that 100% of the population will retire at age 62. The **assumption format** may include different tables or point estimates for different segments of the covered population.
- 2.2 **Assumption Universe**—For each **demographic assumption**, a universe consisting of the possible options that the actuary might reasonably use for the specific assumption. For example, an **assumption universe** for a mortality assumption might reasonably include relevant published or proprietary mortality tables and possible adjustments, such as projections of mortality improvement. For some pension plans, an **assumption universe** for a specific assumption might reasonably include a table or factors developed specifically for that plan.
- 2.3 **Demographic Assumptions**—Demographic and all other noneconomic assumptions (i.e., those assumptions not covered in ASOP No. 27), unless explicitly stated otherwise. Types of **demographic assumptions** may include retirement, mortality and mortality improvement, and other assumptions such as administrative expenses.
- 2.4 **Measurement Date**—The date as of which the values of the pension obligations and, if applicable, assets are determined.
- 2.5 **Measurement Period**—The period subsequent to the **measurement date** during which a particular **demographic assumption** will apply in a given measurement.
- 2.6 **Prescribed Assumption or Method Set by Another Party**—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards give the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is a **prescribed assumption or method set by another party**.
- 2.7 **Prescribed Assumption or Method Set by Law**—A specific assumption or method that is mandated or that is selected from a specified range or set of assumptions or methods that

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is deemed to be acceptable by applicable law (statutes, regulations, and other legally binding authority). For this purpose, an assumption or method selected by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is not a **prescribed assumption or method set by law**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Overview—The actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations and select assumptions based upon application of that professional judgment. The actuary should select reasonable **demographic assumptions** in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. For any given measurement, the actuary will typically be able to identify a range of reasonable assumptions for the same contingency.
- 3.2 Demographic Assumption Selection Process—The actuary should follow the process below, as applicable, for selecting **demographic assumptions**. The actuary need not follow this complete process at each **measurement date** for each assumption if, in the actuary's professional judgment, previously selected assumptions continue to be reasonable.
 - 3.2.1 Identify the Types of Demographic Assumptions Used in the Measurement—The actuary should identify the types of **demographic assumptions** to use for a specific measurement. In doing so, the actuary should take into account the following:
 - a. the purpose of the measurement;
 - b. the plan provisions or benefits and factors that will affect the timing and value of any potential benefit payments;
 - c. the characteristics of the obligation to be measured (such as **measurement period**, pattern of plan payments over time, open or closed group, materiality, and volatility);
 - d. the contingencies that give rise to benefits or result in loss of benefits;
 - e. the materiality of the assumption to the measurement (see section 3.10.2); and
 - f. the characteristics of the covered group.

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The types of **demographic assumptions** used to measure pension obligations may include retirement, termination of employment, mortality and mortality improvement, disability and disability recovery, election of optional forms of benefits, and other assumptions such as administrative expenses; household composition; marriage, divorce, and remarriage; open group assumptions; hours of service; transfers; and assumptions regarding missing or incomplete data.

Not every contingency requires a separate assumption. For example, for a plan that is expected to provide benefits of equal value to employees who voluntarily terminate employment or become disabled, retire, or die, the actuary may use an assumption that reflects some or all of the above contingencies in combination rather than selecting a separate assumption for each.

3.2.2 **Consider the Relevant Assumption Universe**—The actuary should be familiar with the **assumption universe** relevant to each type of assumption identified in section 3.2.1. The **assumption universe** may include tables or factors particular to the given plan as well as general tables, factors, and modifications to the tables that are available to the actuary. Sources of information relevant to **demographic assumptions** may include the following:

- a. experience studies or published tables based on experience under uninsured plans and annuity contracts, or based on any other populations considered representative of the group at hand;
- b. relevant plan or plan sponsor experience, which may include analyses of gains or losses by source;
- c. studies or reports of the effects of plan design, specific events (for example, shutdown), economic conditions, or sponsor characteristics on the **demographic assumption** under consideration;
- d. studies or reports of general trends relevant to the type of **demographic assumption** in question (for example, mortality improvement in the United States); and
- e. relevant information from the plan sponsor or other sources about future expectations.

3.2.3 **Select Assumption Formats**—The actuary should select an appropriate **assumption format** for each **demographic assumption**. Factors that affect format specification may include the following:

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- a. the degree to which the **assumption format** may affect the results;
- b. the availability of tables, data, or information relevant to the assumption being selected;
- c. the degree to which the **assumption format** has the potential to model anticipated plan experience;
- d. the size of the covered population; and
- e. the degree to which a parameter (such as gender, age, service, or calendar year) is anticipated to affect experience.

In many situations it is appropriate for the **assumption format** to include assumptions for different segments of the covered population. For example, it may be appropriate to have different mortality tables for males and females or different turnover tables for salaried and hourly employees.

3.2.4 **Select the Specific Assumptions**—The actuary should select each **demographic assumption** from the appropriate **assumption universe**. In all cases, the actuary should take into account the significance of each assumption selected. The actuary should take into account factors specific to the measurement when selecting assumptions. Such factors are as follows:

- a. the purpose and nature of the measurement. For example, a cash flow projection may require more refined assumptions than a liability measure;
- b. any features of the plan design or change in the plan design that may influence the assumptions. For example, the introduction of an early retirement subsidy could influence the plan's incidence of retirement or termination; under these circumstances, in order to measure the incremental cost associated with this change, the assumptions for the proposed plan provision may differ from the assumptions for the current provision;
- c. appropriate experience from the specific plan and other relevant sources; and
- d. relevant factors known to the actuary that may affect future experience, such as the economic conditions of the area or industry, availability of alternative employment, or the human resources practices of the employer.

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Specific experience of the covered group or other groups with similar characteristics may be useful in forming a judgment about future expectations. However, the actuary should not give undue weight to experience that is not sufficiently credible. The actuary should refer to ASOP No. 25, *Credibility Procedures*, for additional guidance.

In addition, the actuary should not give undue weight to experience that may not be relevant to future expectations. For example, if recent rates of termination and retirement were largely attributable to a one-time workforce reduction, it may be unreasonable to assume that such rates will continue over the **measurement period**.

3.2.5 **Select a Reasonable Assumption**—The actuary should select reasonable **demographic assumptions**. For this purpose, an assumption is reasonable if it has the following characteristics:

- a. it is appropriate for the purpose of the measurement;
- b. it reflects the actuary's professional judgment;
- c. it takes into account current and historical data that is relevant to selecting the assumption for the **measurement date**, to the extent such relevant data is reasonably available;
- d. it reflects the actuary's estimate of future experience, the actuary's observation of the estimates inherent in market data (if any), or a combination thereof; and
- e. it is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation or plan provisions that are difficult to measure are included (as discussed in section 3.10.1) or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

3.3 **Range of Reasonable Assumptions**—Due to the uncertain nature of the items for which assumptions are selected, the actuary may consider several different assumptions reasonable for a given measurement. Different actuaries will apply different professional judgment and may choose different reasonable assumptions. As a result, a range of reasonable assumptions may develop, both for an individual actuary and across actuarial practice.

3.4 **Specific Considerations**—When performing the assumption selection process described in section 3.2, the actuary should be aware of specific considerations that may apply to the selection of individual assumptions, as discussed below.

3.4.1 **Retirement**—The actuary should take into account factors that may affect rates of retirement, such as the following:

- a. employer-specific or job-related factors such as occupation, employment practices, work environment, unionization, hazardous conditions, and location of employment;
- b. the plan design, where specific incentives may influence when participants retire;
- c. the design of, and date of anticipated payment from, social insurance programs (for example, Social Security or Medicare) or other non-employer-sponsored benefit programs (for example, health insurance exchange plan); and
- d. the availability of other employer-sponsored postretirement benefit programs (for example, postretirement health coverage or savings plan).

3.4.2 **Termination of Employment**—The actuary should take into account factors that may affect rates of termination of employment, such as the following:

- a. employer-specific or job-related factors such as occupation, employment practices, work environment, unionization, hazardous conditions, and location of employment; and
- b. plan provisions, such as early retirement benefits, vesting schedule, or payout options.

3.4.3 **Mortality**—The actuary should take into account factors that may affect rates of mortality, such as the following:

- a. the characteristics of employees and retirees (for example, it may be reasonable to select different assumptions for pre and post retirement);
- b. the size of the covered population (for example, for some small plans, a reasonable model for mortality may be to assume no mortality before retirement);

- c. the characteristics of disabled lives, which may depend on the plan's definition of disability and how it is administered; and
- d. the characteristics of different participant subgroups and beneficiaries.

The actuary should consider using actual participant mortality data, to the extent fully or partially credible, or published and generally available mortality tables. If the actuary selects a mortality assumption that is based on mortality tables that substantially predate more recently published relevant and generally available mortality tables, the actuary should disclose the rationale for the use of such tables instead of a more recently published table, in accordance with section 4.1.2.

3.4.4 Mortality Improvement—The actuary should reflect the effect of mortality improvement (which may be positive, negative, or zero) both before and after the **measurement date**. With regard to mortality improvement, the actuary should do the following:

- a. adjust mortality rates to reflect an assumption as to mortality improvement before the **measurement date**. For example, if the actuary starts with a published mortality table, the mortality rates may need to be adjusted to reflect mortality improvement from the effective date of the table to the **measurement date**. Such an adjustment is not necessary if, in the actuary's professional judgment, the published mortality table reflects expected mortality rates as of the **measurement date**. This assumption should be disclosed in accordance with section 4.1.1, even if the actuary concludes that such an adjustment is not necessary; and
- b. include an assumption as to expected mortality improvement after the **measurement date**. This assumption should be disclosed in accordance with section 4.1.1, even if the actuary concludes that an assumption of zero future improvement is reasonable as described in section 3.2.5. Note that the existence of uncertainty about the occurrence or magnitude of future mortality improvement does not by itself mean that an assumption of zero future improvement is a reasonable assumption.

3.4.5 Disability and Disability Recovery—The actuary should take into account factors that may affect rates of disability and disability recovery, such as the following:

- a. the plan's definition of disability (for example, whether the disabled person must be eligible for Social Security disability benefits); and

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- b. the potential for recovery. For example, if the plan requires continued disability monitoring and if the plan's definition of disability is not highly restrictive, an assumption for rates of recovery may be appropriate. Alternatively, the probability of recovery may be reflected by assuming a lower incidence of disability than the actuary might otherwise assume.
- 3.4.6 **Election of Optional Form of Benefit**—The actuary should take into account factors that may affect rates of electing an optional form of benefit, such as the following:
- a. the optional forms of benefit and benefit commencement dates available under the plan being valued;
 - b. the historical or expected experience of elections under the plan being valued and similar plans; and
 - c. the degree to which particular optional forms of benefit may be subsidized.
- 3.4.7 **Expenses Paid from Plan Assets**—The actuary should take into account expenses paid from plan assets such as investment advisory, investment management, or insurance advisory services; premiums paid to the Pension Benefit Guaranty Corporation (PBGC); accounting and auditing services; actuarial services; plan administration services; legal services; and trustee services. Formats for these assumptions may include a dollar amount, a specific percentage of assets, a reduction in the investment return assumption, a percentage of benefit obligation or normal cost, or a combination thereof.
- 3.5 **Other Demographic Assumptions**—The actuary should follow the general selection process outlined in section 3.2 when selecting other assumptions relevant to the measurement. Such assumptions may include the following:
- 3.5.1 **Household Composition**—Household composition may affect the payment of benefits, the amount of benefits, or other **demographic assumptions**. For example, some plans provide annuity death benefits to surviving children under a stated age. In that case, an assumption as to the number and ages of the potential beneficiaries may be needed.
- 3.5.2 **Marriage, Divorce, and Remarriage**—Marriage, divorce, or remarriage may affect the payment of benefits, the amount or type of benefits, or the continuation of benefit payments. An assumption regarding beneficiary ages may also be necessary.

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- 3.5.3 **Open Group**—Certain assumptions, such as the number and characteristics of new entrants, are applicable in open-group measurements.
- 3.5.4 **Hours of Service**—Assumptions for hours of service are generally plan- or industry-specific. Separate assumptions may also be needed for such purposes as benefit accrual and total employer plan contributions.
- 3.5.5 **Transfers and Return to Employment**—The assumptions for transfers or return to employment are generally plan- or industry-specific. Transfers and return to employment may be one-time events or may be continual if employees are required or permitted to move among groups that are covered by the same or different plans.
- 3.5.6 **Missing or Incomplete Data**—The data provided may be incomplete due to missing elements such as birth dates or hire dates. Accordingly, assumptions for missing or incomplete data may be necessary if the actuary has determined, in accordance with ASOP No. 23, *Data Quality*, that the overall data are of sufficient quality to complete the assignment. Data actually supplied may be relevant in making such assumptions. For example, it may be appropriate to assume a missing birth date is equal to the average birth date for other participants who have complete data and who have the same service credits as the participant whose date of birth is missing.
- 3.6 **Consistency among Assumptions Selected by the Actuary for a Particular Measurement**—With respect to a particular measurement, the actuary should select **demographic assumptions** that are consistent with the other assumptions selected by the actuary, including economic assumptions, unless an assumption considered individually is not material (see section 3.10.2). For example, if an employer's business is in decline and the effect of that decline is reflected in the turnover assumption, it may be appropriate to reflect a change in the retirement assumption, and it may also be appropriate to reflect a change in the compensation increase assumption.
- In addition, the actuary should evaluate the assumptions for consistency with **demographic assumptions** used for measurements of different benefit plans covering the same covered group, if that information is available to the actuary. To the extent the actuary determines that inconsistencies exist, the actuary should determine whether those inconsistencies are reasonable and make adjustments if appropriate.
- The actuary is not required to select assumptions that are consistent with assumptions not selected by the actuary.
- 3.7 **Reviewing Assumptions Previously Selected by the Actuary**—At each **measurement date**, the actuary should determine whether the **demographic assumptions** selected by the actuary for a previous **measurement date** continue to be reasonable. In making this

determination, the actuary should take into account changes in relevant factors known to the actuary that may affect future experience. The actuary should also review recent gain and loss analyses, if any. In addition, the actuary should consider whether an experience study should be performed; however, the actuary is not required to perform an experience study. For each previously selected assumption that the actuary determines is no longer reasonable, the actuary should select a reasonable new assumption.

- 3.8 **Assessing Assumptions Not Selected by the Actuary**—At each **measurement date**, the actuary should assess the reasonableness of each **demographic assumption** that the actuary has not selected (other than **prescribed assumptions or methods set by law** or assumptions disclosed in accordance with section 4.2[b]), using the guidance set forth in this standard to the extent practicable.
- 3.9 **Phase-In of Changes in Assumptions**—If a **demographic assumption** is being phased in over a period that includes multiple **measurement dates**, the actuary should determine the reasonableness of the **demographic assumption** and its consistency with other assumptions as of the **measurement date** at which it is applied, without regard to changes to the assumption planned for future **measurement dates**. If the actuary determines that a **demographic assumption** is not reasonable as of the **measurement date** at which it is applied, the actuary should select a reasonable new assumption.
- 3.10 **General Considerations**—The actuary should take into account the following when applicable:
 - 3.10.1 **Adverse Deviation or Plan Provisions That Are Difficult to Measure**—Depending on the purpose of the measurement, the actuary may determine that it is appropriate to adjust the **demographic assumptions** to provide for adverse deviation or reflect plan provisions that are difficult to measure. The actuary should disclose any explicit adjustment made in accordance with section 4.1.1.
 - 3.10.2 **Materiality**—The actuary should take into account the balance between refined **demographic assumptions** and materiality. The actuary is not required to use a particular type of **demographic assumption** or to select a more refined **demographic assumption** when in the actuary’s professional judgment such use or selection is not expected to produce materially different results.
 - 3.10.3 **Cost of Using Refined Assumptions**—The actuary should take into account the balance between refined **demographic assumptions** and the cost of using refined **demographic assumptions**. For example, actuaries working with small plans may prefer to emphasize the results of general research to comply with this standard.

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- 3.10.4 **Combined Effect of Assumptions**—The actuary should select assumptions (both **demographic assumptions**) selected in accordance with this standard and economic assumptions selected in accordance with ASOP No. 27) such that the combined effect of the assumptions selected by the actuary is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic) except when provisions for adverse deviation are included or when alternative assumptions are used for the assessment of risk, in accordance with ASOP No. 51. For example, the actuary may have decided not to make any assumption with regard to four different types of future events, each of which alone is immaterial. However, the effect of omitting assumptions for all four types of future events may be a material understatement or overstatement of the measurement results. In these circumstances, the assumptions should be revised.
- 3.10.5 **Changes in Circumstances**—The actuary should select **demographic assumptions** that reflect the actuary’s knowledge as of the **measurement date**. If the actuary learns of an event occurring after the **measurement date** (for example, plan termination or death of the principal owner) that would have changed the actuary’s selection of a **demographic assumption**, the actuary may reflect this change as of the **measurement date**.
- 3.10.6 **Other Sources of Demographic Data and Analyses**—When the actuary is responsible for selecting or giving advice on selecting **demographic assumptions** within the scope of this standard, the actuary may incorporate demographic data and analyses from a variety of other sources, including representatives of the plan sponsor and administrator, demographers, economists, and other professionals. However, the selection or advice should reflect the actuary’s professional judgment.
- 3.11 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The degree of such documentation should be based on the professional judgment of the actuary, and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 4, 23, 25, 27, 41, and 51. In addition, the actuary should disclose the following in such actuarial reports:

4.1.1 **Assumptions Used**—The actuary should describe each significant **demographic assumption** used in the measurement and, to the extent known, whether the assumption represents an estimate of future experience, an observation of the estimates inherent in market data, or a combination thereof. The actuary should also include a disclosure of any explicit adjustment made in accordance with section 3.10.1 for adverse deviation or plan provisions that are difficult to measure. Sufficient detail should be shown to permit another qualified actuary to assess the level and pattern of each assumption (for example, by supplying the name of a published decrement table or by showing turnover rates at every fifth age for an unpublished age-based table).

The disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand any adjustment to reflect mortality improvement from the effective date of the table to the **measurement date** and the provision made for future mortality improvement. If the actuary assumes zero mortality improvement after the **measurement date**, the actuary should state that no provision was made for future mortality improvement.

4.1.2 **Rationale for Assumptions**—For each **demographic assumption** that has a significant effect on the measurement and that the actuary has selected, the actuary should disclose the information and analysis used to support the actuary’s determination that the assumption is reasonable.

For each **demographic assumption** that has a significant effect on the measurement and that the actuary has not selected (other than **prescribed assumptions or methods set by law** or assumptions disclosed in accordance with section 4.2[a] or [b]), the actuary should disclose the information and analysis used to support the actuary’s determination that the assumption does not significantly conflict with what, in the actuary’s professional judgment, is reasonable for the purpose of the measurement.

The disclosures should be based on the **demographic assumptions** as of the **measurement date** at which they are applied without regard to changes to the assumptions planned for future **measurement dates**. These disclosures may be brief but should be pertinent to the plan’s circumstances. For example, the actuary may disclose any specific approaches used, sources of external advice, and how past experience and future expectations were considered in determining the assumption to be reasonable. If applicable, the actuary should disclose the time period of relevant plan or plan sponsor experience that was last analyzed, including the date of any experience study used in the selection process.

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Additionally, if the disclosure relates to a mortality assumption that is based on mortality tables that substantially predate more recently published relevant and generally available mortality tables, the actuary should disclose the rationale for the use of such tables instead of a more recently published table.

- 4.1.3 **Changes in Assumptions**—The actuary should disclose any changes in the significant **demographic assumptions** from those previously used for the same type of measurement. The general effects of the changes should be disclosed in words or by numerical data, as appropriate. For situations in which both the **demographic assumptions** and economic assumptions have changed from those previously used for the same type of measurement, the actuary may disclose the general effects of the changes separately or combined, as appropriate. For each assumption that is neither a **prescribed assumption or method set by another party** nor a **prescribed assumption or method set by law**, the actuary should include an explanation of the information and analysis that led to the change.

The disclosure may be brief but should be pertinent to the plan’s circumstances. The disclosure may reference any actuarial experience study performed, including the date of the experience study report.

- 4.1.4 **Changes in Circumstances**—The actuary should refer to ASOP No. 41 for communication and disclosure requirements regarding changes in circumstances known to the actuary that occur after the **measurement date** and that would affect **demographic assumptions** selected as of the **measurement date**.

- 4.2 **Disclosure about Assumptions Not Selected by the Actuary**—The actuary’s report should state the source of any assumption that the actuary has not selected.

With respect to assumptions that the actuary has not selected, other than **prescribed assumptions or methods set by law**, the actuary’s report should identify the following, if applicable:

- a. any such assumption that significantly conflicts with what, in the actuary’s professional judgment, is reasonable for the purpose of the measurement (section 3.8); or
- b. any such assumption that the actuary is unable to assess for reasonableness for the purpose of the measurement (section 3.8).

- 4.3 **Additional Disclosures in an Actuarial Report**—The actuary should also include the following, when applicable, in an actuarial report:

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- a. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method set by a party other than the actuary; and
 - b. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.4 Confidential Information—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

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Appendix

Comments on the Second Exposure Draft and Responses

The second exposure draft of the proposed revision of ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, was issued in June 2019 with a comment deadline of September 15, 2019. Six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Pension Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each. Minor wording or punctuation changes that are suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” includes the Pension Committee and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested that this ASOP and ASOP No. 27, <i>Selection of Economic Assumptions for Measuring Pension Obligations</i> , should be merged into a single ASOP on selection of assumptions for measuring pension obligations.
Response	The reviewers may consider merging the two ASOPs in the future.
Comment	One commentator stated there was no discussion in the ASOP regarding a noneconomic assumption that is not a demographic assumption.
Response	The reviewers disagree and note as an example that section 3.4.7 refers to expenses paid from plan assets.
Comment	One commentator felt the structure and order of ASOP No. 35 should be changed to be consistent with ASOP No. 27.
Response	The reviewers agree with the objective of consistency in the structure and order and may consider merging the two ASOPs in the future.
SECTION 2. DEFINITIONS	
Comment	One commentator felt that the ASOP should prescribe a maximum length of time (for example 5 years) between relevant demographic and other noneconomic assumption studies so that pension plans stay up to date on current understanding of costs and trends.
Response	The reviewers believe that the suggested guidance is too prescriptive and made no change in response to this comment.

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SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, Demographic Assumption Selection Process	
Comment	One commentator felt the reference of section 3.7 in section 3.2 was unclear with respect to the first year an actuary performs a valuation of a pension plan (after a different actuary performed the valuation the prior year).
Response	The reviewers agree and removed the reference to section 3.7 from section 3.2.
Section 3.2.2, Consider the Relevant Assumption Universe	
Comment	One commentator felt section 3.2.2 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.2.4, Select the Specific Assumptions	
Comment	One commentator felt that in section 3.2.4(b) both retirement and termination assumptions should be addressed, as the introduction of an early retirement subsidy may be reasonably expected to affect both.
Response	The reviewers agree and modified the language to address this comment.
Section 3.2.5, Select a Reasonable Assumption	
Comment	One commentator questioned why section 3.2.5 came after 3.2.4.
Response	The reviewers believe that the two sections are complementary, that the guidance is sufficiently clear, and made no change in response to this comment.
Section 3.4, Specific Considerations	
Comment	One commentator felt section 3.4 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.4.3, Mortality	
Comment	Two commentators felt that in addition to considering using recently published and generally available mortality tables, the actuary may consider using actual participant mortality data, to the extent fully or partially credible.
Response	The reviewers agree and modified the language in response to these comments.
Section 3.4.4, Mortality Improvement	
Comment	One commentator felt that full generational projection of mortality improvement is now commonly used and that the language in section 3.4.4 should be changed to reflect stronger expectations of actuaries' ability to reflect future mortality improvement.
Response	The reviewers believe that the suggested language is too prescriptive and made no change in response to this comment.
Section 3.4.5, Disability and Disability Recovery	
Comment	One commentator felt the phrase "for example, whether the disabled person is eligible for Social Security" should be reworded to read "e.g., whether the disabled person must be eligible for Social Security disability benefits to qualify for plan disability benefits."
Response	The reviewers agree and modified the language in response to this comment.

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Section 3.4.7, Expenses Paid from Plan Assets	
Comment	One commentator suggested the first sentence be changed to add the following underlined phrase because not all of the expenses listed are always appropriate to the purpose of the measurement: “The actuary should take into account expenses paid from plan assets that are appropriate for the purpose of the measurement, such as investment advisory, investment management....”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested moving coverage of this assumption from ASOP No. 35 to ASOP No. 27, as we think it is more relevant to the selection of economic assumptions than to the selection of demographic assumptions.
Response	The reviewers acknowledge this guidance could be included in either ASOP but made no change in response to this comment.
Sections 3.5.1, Household Composition; 3.5.2, Marriage, Divorce, and Remarriage; 3.5.3, Open Group; 3.5.4, Hours of Service; and 3.5.5, Transfers and Return to Employment	
Comment	One commentator felt sections 3.5.1-3.5.5 were too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.5.6, Missing or Incomplete Data	
Comment	One commentator noted that section 3.5.6 duplicates parts of ASOP No. 23, <i>Data Quality</i> , and believes it is inappropriate to include wording about data quality in other ASOPs than ASOP No. 23.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Section 3.7, Reviewing Assumptions Previously Selected by the Actuary	
Comment	One commentator suggested that it would be helpful if this section made clear that the actuary should also review the demographic assumptions used by the actuary who last performed the measurement before using them to ensure they remain reasonable.
Response	The reviewers disagree and believe the guidance in this ASOP is clear. Therefore, the reviewers made no change in response to this comment.
Section 3.9, Phase-in of Changes in Assumptions	
Comment	One commentator suggested that this section is not clear or necessary and was concerned this section could be read to apply to select and ultimate assumptions.
Response	The reviewers disagree and believe that the guidance “phased in over a period that includes multiple measurement dates” is sufficiently clear and made no change in response to this comment.
Section 3.10, Other Considerations	
Comment	One commentator suggested changing the title of section 3.10 to “General Considerations” and deleting “considerations” from “the actuary should take into account the following considerations...” in the first sentence for consistency with section 3.5 of ASOP No. 27.
Response	The reviewers agree and modified the language in response to this comment.
Section 3.10.1, Adverse Deviation or Plan Provisions That Are Difficult to Measure	
Comment	One commentator suggested replacing “considerations such as adverse deviation or” with “adverse deviation or reflect” in the first sentence.
Response	The reviewers agree and modified the language in response to this comment.

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Comment	One commentator suggested that section 3.10.1 should be modified to be consistent with the disclosure requirements in section 4.1.1.
Response	The reviewers agree and modified the language in section 3.10.1.
Section 3.10.3, Cost of Using Refined Assumptions	
Comment	One commentator suggested deleting the last sentence in section 3.10.3.
Response	The reviewers agree and modified the language in response to this comment.
Section 3.10.4, Combined Effect of Assumptions	
Comment	One commentator suggested the reference to the combined effect of assumptions having no significant bias should carve out an exception for risk analyses under ASOP No. 51, <i>Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions</i> , as section 3.2.5(e) does.
Response	The reviewers agree and modified the language in response to this comment.
Section 3.10.6, Other Sources of Demographic Data and Analyses	
Comment	One commentator felt section 3.10.6 contained no component of a standard but might be useful in an appendix of presentation.
Response	The reviewers disagree and made no change in response to this comment.
Section 3.11, Documentation	
Comment	One commentator suggested that if section 3.11 is retained, the ASB should change “should consider” to “should.”
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator felt that this section is an unnecessary addition to the ASOP and may create additional and unnecessary work for the actuary that would likely be uncompensated.
Response	The reviewers disagree and made no change in response to this comment.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1.1, Assumptions Used	
Comment	One commentator suggested that the first sentence of section 4.1.1 should be clarified to only require the disclosure that the assumption “represents an estimate of future experience, the actuary’s observation of the estimates inherent in market data, or a combination thereof” if the assumption was selected by the actuary.
Response	The reviewers disagree and made no change in response to this comment.
Section 4.1.2, Rationale for Assumptions	
Comment	One commentator felt that the second paragraph of 4.1.2 should allow the actuary to assess the reasonableness of a combination of assumptions (which could be both economic and demographic), without any requirement to parse the array into distinct assumptions.
Response	The reviewers disagree and made no change in response to this comment.

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Comment	One commentator felt that the current requirement that the actuary disclose if he or she believes the assumption significantly conflicts with what would be reasonable is appropriate and sufficient, and objects to requiring the actuary to provide supporting information and analysis for an assumption that does not seem to significantly conflict.
Response	The reviewers disagree, believe the current guidance is appropriate, and made no change in response to this comment.
Comment	One commentator suggested that plan-specific tables can be more relevant than general tables.
Response	The reviewers agree and modified the guidance in section 3.4.3 in response to this comment.
Comment	One commentator suggested that the requirement to disclose justification for using an older mortality table not be applied to disabled life mortality.
Response	The reviewers disagree that the disclosure requirement not be applied to disabled life mortality but changed “justification” to “rationale” in response to this comment in this section and in section 3.4.3.
Section 4.2, Disclosure about Assumptions Not Selected by the Actuary	
Comment	One commentator suggested that the term “source” in section 4.2 should be clarified.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator felt it would be helpful to clarify that the disclosures in section 4.2 only apply to material assumptions (i.e., revise stem to read “source of any material assumption”).
Response	The reviewers disagree and made no change in response to this comment.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 36**

**Statements of Actuarial Opinion Regarding
Property/Casualty Loss and Loss Adjustment Expense Reserves**

Revised Edition

**Developed by the
Subcommittee on Reserving of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2010
Updated for Deviation Language Effective May 1, 2011**

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ASOP No. 36—December 2010

December 2010

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 36

This document contains the final version of a revision of ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*.

Background

In March 2000, the Actuarial Standards Board originally adopted ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* (Doc. No. 069). This standard provides guidance to actuaries when issuing specific types of Statements of Actuarial Opinion.

ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, was adopted by the Actuarial Standards Board in June 2007. This standard provides guidance to actuaries regarding the estimation of unpaid claims, both when such estimates are performed to support a Statement of Actuarial Opinion covered by ASOP No. 36 and in other circumstances.

The Casualty Committee's Subcommittee on Reserving has prepared this revision to ASOP No. 36 to eliminate redundant guidance and language that exists between ASOP Nos. 36 and 43, to maintain consistency between ASOP Nos. 36 and 43, and to clarify and provide further guidance within ASOP No. 36.

First Exposure Draft

The first exposure draft of this revised ASOP was issued in March 2009 with a comment deadline of June 15, 2009. The Subcommittee on Reserving carefully considered the eleven comment letters received and made changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was issued in March 2010 with a comment deadline of June 30, 2010. The Subcommittee on Reserving carefully considered the six comment letters received and made changes in several sections in response.

For a summary of the issues contained in these comment letters, please see appendix 2.

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The ASB thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB adopted this revised standard at its December 2010 meeting.

Subcommittee on Reserving of the Casualty Committee

Raji Bhagavatula, Chairperson

Ralph S. Blanchard	Chandrakant C. Patel
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Actuarial Standards Board

Albert J. Beer, Chairperson

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Thomas D. Levy	James F. Verlautz

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 36

**STATEMENTS OF ACTUARIAL OPINION
REGARDING PROPERTY/CASUALTY
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to the actuary in issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves.
- 1.2 **Scope**—This standard applies to actuaries when providing written statements of actuarial opinion with respect to property/casualty loss and loss adjustment expense reserves of insurance or reinsurance companies and other property/casualty risk financing systems, such as self-insurance, that provide similar coverages, under one of the following circumstances:
 - a. the statement of actuarial opinion is prepared to comply with NAIC Property and Casualty Annual Statement Instructions, or
 - b. the statement of actuarial opinion is otherwise prescribed by law or regulation, or
 - c. the statement of actuarial opinion is represented by the actuary as being in compliance with this standard.

References in the standard to “insurance,” “reinsurance,” or “self-insurance” should be interpreted to include risk financing systems that provide for risk retention in lieu of risk transfer. This standard does not apply to statements of actuarial opinion subject to ASOP No. 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*; ASOP No. 28, *Compliance with Statutory Statement of Actuarial Opinion Requirements for Hospital, Medical, and Dental Service or Indemnity Corporations, and for Health Maintenance Organizations*; or Actuarial Compliance Guideline No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*.

If the actuary’s statement of actuarial opinion includes an opinion regarding amounts for items other than loss and loss adjustment expense reserves, this standard applies only to the portion of the statement of actuarial opinion that relates to loss and loss adjustment expense reserves.

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If the actuary is providing a statement of actuarial opinion for discounted loss and loss adjustment expense reserves, the actuary should be guided by both this standard and ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for all statements of actuarial opinion regarding loss and loss adjustment expense reserves issued on or after May 1, 2011.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Accounting Date**—The stated cutoff date for reflecting events and recording amounts as paid or unpaid in a financial statement or accounting system. The accounting date is sometimes referred to as the “as of date.”
- 2.2 **Coverage**—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.
- 2.3 **Event**—The incident or activity that triggers potential for claim or claim adjustment expense payment.
- 2.4 **Explicit Risk Margin**—An explicit provision for uncertainty in a reserve or unpaid claim estimate.
- 2.5 **Loss**—The cost that is associated with an event that has taken place and that is subject to coverage. It is also known as “claim amount.” The term “loss” may include loss adjustment expenses as appropriate.
- 2.6 **Loss Adjustment Expense**—The costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid. It is also known as “claim adjustment expense.”

- 2.7 Present Value—The value at a point in time of cash flows at other points in time, calculated at selected interest rates. It is also known as “discounted present value” or “discounted value.”
- 2.8 Reserve—An amount recorded in financial statements or accounting systems in order to reflect potential obligations.
- 2.9 Reserve Evaluation—The process of evaluating the reasonableness of a reserve.
- 2.10 Review Date—The date (subsequent to the valuation date) through which material information known to the actuary is included in forming the reserve opinion.
- 2.11 Unpaid Claim Estimate—The actuary’s estimate of the obligation for future payment resulting from claims due to past events.
- 2.12 Unpaid Claim Estimate Analysis—The process of developing an unpaid claim estimate.
- 2.13 Valuation Date—The date through which transactions are included in the data used in the unpaid claim estimate analysis.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Legal and Regulatory Requirements—When an actuary prepares a statement of actuarial opinion to satisfy the requirements of law or regulation, the actuary should have the necessary knowledge to comply with the specific requirements of that law or regulation. The actuary should be satisfied that the statement of actuarial opinion is consistent with relevant requirements of applicable laws and regulations.
- 3.2 Purpose and Users of the Statement of Actuarial Opinion—The actuary should identify the intended purpose and intended users of the statement of actuarial opinion. For example, the intended purpose may be to satisfy the requirements for such an opinion under the NAIC Annual Statement Instructions, and the intended users may be the company and its regulators.
- 3.3 Reserves Being Opined Upon—The actuary should identify the following regarding the reserves being opined upon:
- a. the reserve amount(s);
 - b. the accounting date; and
 - c. the accounting standards applicable for the reserves, if relevant (for example, US SAP, US GAAP, IFRS, etc.).

3.4 **Stated Basis of Reserve Presentation**—The actuary should identify the stated basis of reserve presentation, which is a description of the nature of the reserves, usually found in the financial statement and the associated footnotes and disclosures. The stated basis often depends upon regulatory or accounting requirements. It includes, as appropriate, the following:

- a. whether reserves are stated as being nominal or discounted for the time value of money and, if discounted, the items discounted (for example, tabular reserves only) and the stated basis for the interest rate (for example, risk-free rate, portfolio rate, or fixed rate of x%);
- b. whether the reserves are stated to include an explicit risk margin and, if so, the stated basis for the explicit risk margin (for example, stated percentile of distribution, or stated percentage load above expected);
- c. whether the reserves are gross or net of specified recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation);
- d. whether the potential for uncollectible recoverables is considered in the reserves, when recoverables are involved and, if so, the categories of such uncollectible recoverables considered and whether those categories reflect currently known collectibility concerns or potential ultimate collectibility concerns. Possible categories of uncollectibles include those related to disputes and those related to counterparties in financial difficulty (credit default);
- e. the types of unpaid loss adjustment expenses covered by the reserve (for example, coverage dispute costs, defense costs, and adjusting costs);
- f. when the opinion is only for a portion of a reserve, the claims exposure to be covered by the opinion (for example, type of loss, line of business, year, and state); and
- g. any other items that, in the actuary's professional judgment, are needed to describe the reserves sufficiently for the actuary's evaluation of the reserves.

To the extent the actuary does not know the above items, the actuary should request this information from the principal. If unable to obtain these items from the principal, the actuary should identify what the actuary assumed to be the intended basis of reserve presentation for purposes of the reserve evaluation.

3.5 **Scope of the Analysis Underlying the Statement of Actuarial Opinion**—The actuary should identify the scope of the analysis upon which the opinion is based. This includes the following:

- a. the review date, if it differs from the date the opinion is signed;

- b. if separate reserve amounts for different reserve items, such as losses and loss adjustment expenses, are disclosed in the statement of actuarial opinion, whether the actuary's opinion applies to those items in the aggregate or individually; and
 - c. any other items that, in the actuary's professional judgment, are needed to describe the scope of the actuary's analysis sufficiently.
- 3.6 **Materiality**—The actuary should evaluate materiality based on the actuary's professional judgment, any applicable materiality guidelines or standards, and the intended purpose for which the actuary is preparing the statement of actuarial opinion.
- The actuary should understand which financial values are usually important to the intended users of the statement of actuarial opinion and how those financial values are likely to be affected by changes in the reserves and future payments for losses and loss adjustment expenses. For example, for a statement of actuarial opinion for an insurance company to be used for financial reporting to insurance regulators, materiality might be evaluated in terms of the company's reported reserves or statutory surplus.
- 3.7 **Reserve Evaluation**—The actuary should consider a reserve to be reasonable if it is within a range of estimates that could be produced by an unpaid claim estimate analysis that is, in the actuary's professional judgment, consistent with both ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, and the identified stated basis of reserve presentation.

The actuary should consider the relevant characteristics of the entity's exposures to the extent that they are likely to have a material effect on the results of the actuary's reserve evaluation. These characteristics may be influenced by the methods used to sell or provide coverages, the distribution channels from which the entity's business is obtained, the general underwriting practices and pricing philosophy of the entity, and the marketing objectives and strategies of the entity.

If the actuary makes use of other personnel within the actuary's control to carry out assignments relative to analyses supporting the opinion, the actuary should review their contributions and be satisfied that those contributions are reasonable.

The actuary may develop estimates of the unpaid claims for all or a portion of the reserve or make use of another's unpaid claims estimate analysis or opinion for all or a portion of the reserve. For purposes of this section, "another" refers to one not within the actuary's control.

3.7.1 **Evaluation Based on Actuary's Unpaid Claim Estimates**—When developing unpaid claim estimates to evaluate the reasonableness of a reserve, the actuary may develop a point estimate, a range of estimates, or both. The actuary should be guided by ASOP No. 43 for the development of these unpaid claim estimates.

3.7.2 Evaluation Based on Actuary's Use of Another's Unpaid Claims Estimate Analysis or Opinion

Analysis or Opinion—In the course of conducting a reserve evaluation, the actuary may make use of another's supporting analyses or opinions. The actuary should understand the intended purpose of the analyses or opinions, and assess whether the analyses or opinions are consistent with the stated basis of presentation of the reserves. (See section 4.2(f) for related disclosure requirements.)

The actuary should only make use of another's analyses or opinions when, in the actuary's professional judgment, it is reasonable to do so. In making this determination, the actuary should consider the following:

- a. the amount of the reserves covered by another's analyses or opinions in comparison to the total reserves subject to the actuary's opinion;
- b. the nature of the exposure and coverage;
- c. the way in which reasonably likely variations in estimates covered by another's analyses or opinions may affect the actuary's opinion on the total reserves subject to the actuary's opinion; and
- d. the credentials of the individual(s) that prepared the analyses or opinions.

Where, in the opinion of the actuary, the analyses or opinions of another need to be modified or expanded, the actuary should perform such analyses as necessary to issue an opinion on the total reserves.

If in using the analyses or opinions of another the actuary reaches conclusions materially different from those in the analyses or opinions used, the actuary should, when practical, contact the appropriate parties to discuss the differences. Where material differences exist, the issues underlying the differences should be understood by the actuary. Materiality in this situation should be measured relative to the actuary's opinion, not relative to the analyses or opinions used.

3.8 Prior Opinion—If the actuary prepared the most recent prior opinion, or if the actuary is able to review the prior opining actuary's work, then the actuary should determine whether the current assumptions, procedures, or methods differ from those employed in providing the most recent prior opinion prepared in accordance with this standard. If the current assumptions, procedures, or methods differ from those employed in the prior opinion, the actuary should consider whether the changes are likely to have had a material effect on the actuary's unpaid claim estimate. (See section 4.2(a) for related disclosure requirements.)

The use of assumptions, procedures, or methods for new reserve segments (for example, line of business or accident year) that differ from those used previously is not a change in assumptions, procedures, or methods within the meaning of this section. Similarly, when

the determination of the reasonableness of reserves is based on the periodic updating of experience data, factors, or weights, such periodic updating is not a change in assumptions, procedures, or methods within the meaning of this section.

- 3.9 **Adverse Deviation**—The actuary should consider whether there are significant risks and uncertainties that could result in future paid amounts being materially greater than those provided for in the reserves. (See section 4.2(e) for related disclosure requirements.)

When the actuary's analysis derives separate reserve estimates for various segments or claim groupings, the actuary should consider the combined risks and uncertainties associated with the reserves that are the subject of the opinion.

- 3.10 **Collectibility of Ceded Reinsurance**—If the scope of the statement of actuarial opinion includes reserves net of ceded reinsurance and the amount of ceded reinsurance is material, the actuary should consider the collectibility of ceded reinsurance in evaluating net reserves. The actuary should solicit information from management regarding collectibility problems, significant disputes with reinsurers, and practices regarding provisions for uncollectible reinsurance. The actuary's consideration of collectibility does not imply an opinion on the financial condition of any reinsurer.

- 3.11 **Statements of Actuarial Opinion**—An actuary who is issuing a statement of actuarial opinion cannot claim reliance on another's work or opinion except as described in section 3.7.2. The statement of actuarial opinion should be one of the following types:

- a. **Determination of Reasonable Provision**—The actuary should opine that the reserve amount makes a reasonable provision for the liabilities associated with the specified reserve when the reserve is found to be reasonable. (See section 3.7).
- b. **Determination of Deficient or Inadequate Provision**—The actuary should opine that the reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves when the reserve amount is less than the minimum amount that the actuary believes is reasonable. Furthermore, the actuary should determine the minimum amount that the actuary believes is reasonable. (See section 4.2(b) for related disclosure requirements.)
- c. **Determination of Redundant or Excessive Provision**—The actuary should opine that the reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves when the reserve amount is greater than the maximum amount that the actuary believes is reasonable. Furthermore, the actuary should determine the maximum amount that the actuary believes is reasonable. (See section 4.2(c) for related disclosure requirements.)

- d. Qualified Opinion—The actuary should issue a qualified statement of actuarial opinion when, in the actuary’s opinion, the reserves for a certain item or items within the scope of the opinion are in question because they cannot be reasonably estimated or the actuary is unable to issue an opinion on the reserves for those items. The actuary should determine whether the reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item or items to which the qualification relates. (See section 4.2(d) for related disclosure requirements.) The actuary is not required to issue a qualified opinion if the actuary reasonably believes that the item or items in question are not likely to be material.
 - e. No Opinion—The actuary’s ability to give an opinion is dependent upon data, analyses, assumptions, and related information that are sufficient to support a conclusion. If the actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the actuary should either issue a statement of no opinion or choose not to issue any opinion at all. A statement of no opinion should include a description of the reasons no opinion could be given.
- 3.12 Adequacy of Assets Supporting Reserves—This standard does not obligate the actuary to undertake an evaluation of the adequacy of the assets supporting the stated reserve amount except as may be needed to comply with any applicable law, regulatory requirement, or other ASOP.
- 3.13 Documentation—The actuary should consider the intended purpose of the statement of actuarial opinion when documenting work, and should refer to ASOP No. 41, *Actuarial Communications*. When the statement is provided to meet regulatory requirements, the actuary should follow the detailed requirements specified by regulators as to the form and content of supporting reports and other documentation.

Section 4. Communications and Disclosures

- 4.1 Actuarial Communication—When issuing a statement of actuarial opinion subject to this standard, the actuary should consider the intended purpose of the statement of actuarial opinion and be guided by ASOP No. 41.

In addition, consistent with the intended purpose, the actuary should disclose the following in the statement of actuarial opinion:

- a. the words “statement of actuarial opinion,” or alternative words with similar meaning if required by law or regulation governing the opinion, in the title of the written opinion;
- b. the intended user(s) of the statement of actuarial opinion;

- c. the intended purpose of the statement of actuarial opinion, as described in section 3.2;
- d. the reserves being opined upon, as described in section 3.3;
- e. the stated basis of reserve presentation, as described in section 3.4. In certain circumstances, referring to specific financial statement reserve figures and their specific source (for example, Statutory Annual Statement of Company ABC as filed with the Company's state of domicile) would satisfy disclosures related to section 3.4;
- f. the scope of the analysis underlying the statement of actuarial opinion, as described in sections 3.5(b) and 3.5(c), and the review date (see section 3.5(a)) if different from the date the opinion is signed;
- g. the type of opinion, as described in section 3.11;
- h. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- i. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- j. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 **Additional Disclosures**—In certain cases, consistent with the intended purpose, the actuary may need to make the following disclosures in addition to those in section 4.1:

- a. The actuary should disclose the nature of changes in assumptions, procedures, or methods from those employed in the most recent prior opinion prepared in accordance with this standard, unless the actuary concludes the changes are not likely to have a material effect on the actuary's unpaid claim estimate. This standard does not require the actuary to quantify the impact of such changes. If the actuary is not able to review the prior opining actuary's work, then the actuary should disclose that the prior assumptions, procedures and methods are unknown. (See section 3.8.)
- b. If the actuary determines that the reserve amount is deficient or inadequate, the actuary should disclose the minimum amount that the actuary believes is reasonable.

- c. If the actuary determines that the reserve amount is redundant or excessive, the actuary should disclose the maximum amount that the actuary believes is reasonable.
- d. If the actuary issues a qualified opinion, the actuary should disclose in the opinion the item or items to which the qualification relates, the reasons for the qualification, and the amounts for such items, if disclosed by the entity, that are included in the reserve. If the amounts for such items are not disclosed by the entity, the actuary should disclose that the reserve includes unknown amounts for such items. The actuary should also disclose whether the reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item or items to which the qualification relates.
- e. If the actuary reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation, an explanatory paragraph should be included in the statement of actuarial opinion. (See sections 3.6 and 3.9 for guidance on evaluating materiality and adverse deviation.) The explanatory paragraph should contain the amount of adverse deviation that the actuary judges to be material with respect to the statement of actuarial opinion, and a description of the major factors or particular conditions underlying risks and uncertainties that the actuary believes could result in material adverse deviation.

The actuary is not required to include in the explanatory paragraph general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the actuary required to include an exhaustive list of all potential sources of risks and uncertainties.

- f. If the actuary makes use of an analysis or opinion of another not within the actuary's control for a material portion of the reserves, the actuary should disclose whether the actuary reviewed the others' underlying analysis. If a review was conducted, the actuary should disclose the extent of the review including items such as the methods and assumptions used and the underlying arithmetic calculations.
- g. If the statement of actuarial opinion relies on present values and if the actuary believes that such reliance is likely to have a material effect on the results of the actuary's reserve evaluation, the actuary should disclose that present values were used in forming the opinion, the interest rate(s) used by the actuary, and the monetary amount of discount that was reflected in the reserve amount.
- h. If the reserves being opined upon are net of ceded reinsurance and the amount of ceded reinsurance is material, the actuary should comment on the collectibility of that reinsurance. This standard does not require the actuary to quantify the collectibility. (See section 3.10.)

- i. When the statement is provided to meet regulatory requirements, the actuary should follow the detailed requirements specified by regulators as to the form and content of the required disclosures, to the extent not addressed above.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In 2000, the ASB issued ASOP No. 36, *Statements of Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*. At that time, there was no standard of practice concerning the underlying actuarial analyses. Guidance was provided in the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* adopted by the Board of Directors of the Casualty Actuarial Society in May 1988.

Since the issuance of ASOP No. 36, the ASB has issued ASOP No. 43, *Property/Casualty Unpaid Claim Estimates* in 2007. ASOP No. 43 provides guidance to actuaries concerning the actuarial analyses typically underlying the opinions subject to ASOP No. 36. Certain material is duplicated in these two ASOPs. This revision eliminates the duplications and brings consistency in language with ASOP No. 43.

Current Practices

Actuaries are guided by ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. Other ASOPs issued by the Actuarial Standards Board pertaining to unpaid loss and loss adjustment expense estimates include ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 23, *Data Quality*; and ASOP No. 41, *Actuarial Communications*. Guidance is also provided by the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* of the Casualty Actuarial Society, which is currently under review.

In addition, since 1993, the Casualty Practice Council of the American Academy of Actuaries has published practice notes addressing current National Association of Insurance Commissioners' requirements for the statement of actuarial opinion required for the Statutory Annual Statement. The practice notes describe some current practices and show illustrative wording for handling issues and problems. While these practice notes (and future practice notes issued after the effective date of this standard) can be updated to react in a timely manner to new concerns or requirements, they are not binding, and they have not gone through the exposure and adoption process of the standards of practice promulgated by the Actuarial Standards Board.

Numerous educational papers are in the public domain that are relevant to the topic of reserves and reserve evaluations, including those published by the Casualty Actuarial Society. While these may provide useful educational guidance to practicing actuaries, these are not actuarial standards and are not binding.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, was issued in March 2010 with a comment deadline of June 30, 2010. Six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Subcommittee on Reserving carefully considered all comments received, and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this final version.

GENERAL COMMENTS	
Comment	One commentator thought the use of the word “loss” was confusing and recommended it be eliminated from the standard and replaced by “claim” with a note that the term “loss” is often used in practice.
Response	The reviewers retained the references to “loss reserves” as in the title of the standard, as such use is common and understood. The definition of “loss” states that it is also known as “claim amount.”
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested the scope be changed to include the actuarial opinion summary and supporting reports.
Response	The reviewers disagree and made no change. The actuarial opinion summary and supporting reports are subject to ASOP Nos. 9, <i>Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations</i> ; 41, <i>Actuarial Communications</i> ; and 43, <i>Property/Casualty Unpaid Claim Estimates</i> ; but 36 is intended to apply solely to the statement of actuarial opinion.
SECTION 2. DEFINITIONS	
Section 2.1, Accounting Date	
Comment	One commentator felt the reference to “as of” date was unclear.
Response	The reviewers think the reference helps clarify the definition for some and have left it unchanged.
Comment	One commentator suggested deleting the phrase “as paid.”
Response	The reviewers modified the definition to refer to both “paid” and “unpaid.”
Comment	One commentator suggested changing to “the date on which an accounting period ends”
Response	The reviewers do not believe this adds clarity and made no change.

2.6, Loss Adjustment Expense	
Comment	One commentator thought this definition should be clarified as to whether it includes both unallocated and allocated claim adjustment expenses, thinking the language of the definition implies only “allocated” (i.e., “defense and cost containment” in Annual Statement vernacular) because it leaves out “adjusting and other” (Annual Statement vernacular for unallocated) as examples of types of costs.
Response	The reviewers note the definition does include “administration” and “determining coverage for” which would be Adjusting and Other expenses. Thus, no change was made to the definition.
Section 2.13, Valuation Date	
Comment	One commentator suggested changing to “the date as of which the actuary’s estimate applies to the opinion.”
Response	The reviewers disagree with this definition, as it is possible for a valuation date to differ from the date at which the estimate applies. For example, if an actuary used data through December 31, 2008 to opine on the reasonableness of a reserve booked at December 31, 2007, the valuation date in this case would be December 31, 2008, while the accounting date would be December 31, 2007.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	Two commentators suggested the removal of the section on Risk Transfer Requirements be mentioned in the transmittal memorandum.
Response	The reviewers do not believe this is necessary and made no change. The reason for its removal, as noted in the appendix of the second exposure draft, was that the reviewers decided this is an accounting issue outside the scope of this ASOP. The deletion of this section does not in any way imply the actuary is obligated to opine that the reserves are established in accordance with regulatory or accounting requirements regarding risk transfer in reinsurance contracts.
Section 3.3, Reserves Being Opined On	
Comment	One commentator questioned the need to identify the reserve amount and accounting date, stating they should be simply disclosed. The commentator further noted the accounting date is not mentioned in the disclosures.
Response	The reviewers note it is reasonable to first identify something before disclosing it. Furthermore, the reviewers note the disclosure in 4.1(d) does include both the reserve amount and the accounting date.
Comment	One commentator suggested changing language to state “if there are specific accounting standards applicable to the stated basis (per section 3.4) of the reserves (for example, US SAP, US GAAP, IFRS, etc.), then the actuary should reflect such stated basis in developing their opinion.”
Response	The reviewers have modified the language by adding the words “if relevant.”
Section 3.4, Stated Basis of Reserve Presentation	
Comment	One commentator suggested the last word in this section be changed from “reserve evaluation” to “opinion.”
Response	The reviewers believe “reserve evaluation” is appropriate.

Section 3.5, Scope of the Analysis Underlying the Statement of Actuarial Opinion	
Comment	One commentator suggested revising section 3.5(a) to read “the review date of the actuary’s unpaid claim estimate analysis....”
Response	The reviewers disagree, as it is the review date of the opinion that should be disclosed in the opinion, which may differ from the review date of an underlying unpaid claim estimate analysis. The language in section 3.5 and the definition in section 2.10 were modified to clarify this.
Section 3.7, Reserve Evaluation	
Comment	One commentator suggested changing the word “producers” in section 3.7.2 to “authors.”
Response	The reviewers decided to change the word to “appropriate parties.”
Comment	One commentator stated the second paragraph of this section was educational in nature and therefore inappropriate for a standard of practice.
Response	While the reviewers agree the second sentence of that paragraph is partly educational, the reviewers believe it adds clarity and have retained it.
Comment	One commentator suggested that the paragraph beginning, “If the actuary makes use of other personnel within...” be moved to section 3.7.1., as the commentator believes an actuary making use of other personnel within the actuary’s control to carry out assignments is essentially developing his/her own estimates, so section 3.7.2 would not apply.
Response	The reviewers did not make the change, as it is possible for an actuary to make use of personnel within the actuary’s control in the process of making use of another’s analysis or opinion per section 3.7.2.
Comment	Multiple commentators disagreed with the removal of the references to “review opinion” and suggested changes to allow for a more limited review in certain cases.
Response	The reviewers disagreed, believing that all opinions subject to the standard should be held to the same requirements. The reviewers note that when conducting a “review opinion” the actuary may decide to make use of data accumulations, methods, assumptions and calculations performed by another actuary, so long as, in the actuary’s professional judgment, it is reasonable to do so, as discussed in section 3.7.2. Additional language was added to section 4.2(f) regarding the disclosure of the extent of the actuary’s review of the underlying analysis.
Comment	Some commentators thought the final sentence in the first paragraph of section 3.7.2 was long and could be clarified.
Response	The reviewers edited this sentence, using an outline form, to clarify.
Comment	Some commentators thought the actuary should be required to disclose issues underlying material differences between the actuary’s conclusions and those of an actuary whose work is reviewed.
Response	The reviewers do not believe such disclosure is relevant to the opinion on the reserves.
Comment	One commentator suggested adding language stating the actuary should consider the reasonableness of the unpaid claims estimate.
Response	The reviewers note this is not necessary, as the standard refers to ASOP No. 43, and ASOP No. 43 addresses the topic of reasonableness.
Section 3.8 , Prior Opinion	
Comment	One commentator suggested adding a reference to section 4.2(a).
Response	The reviewers agreed and made the addition.

Section 3.10, Collectibility of Ceded Reinsurance	
Comment	One commentator suggested adding a sentence, “This standard does not obligate the actuary to quantify uncollectible reinsurance recoveries in cases where the applicable accounting standard does not require it.”
Response	The reviewers believe the instruction to “consider” to be appropriate, and did not make any change.
Section 3.11, Statements of Actuarial Opinion	
Comment	One commentator suggested switching the order of the last two sentences in section 3.11(d).
Response	The reviewers agreed and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator thought the requirement of identifying the intended user of the SAO should be removed, stating they are generally addressed to and paid for by the Board of Directors but there is also clearly an intended use for regulators, and that this is confusing and will lead to criticisms about independence and conflicts of interest.
Response	The reviewers disagree with the suggested change, as the disclosure should add clarity. An example of intended users has been added to section 3.2.
Comment	Some commentators suggested expanding 4.1(f) to include disclosure of the valuation date. One commentator believed this would help provide clarity when an unpaid claim estimate analysis is performed prior to the accounting date with a subsequent roll-forward to the accounting date.
Response	The reviewers believe this disclosure is more appropriate in the underlying report than in the opinion, and have deleted the reference to valuation date in section 3.5. The preparation of the underlying report is covered by ASOP No. 43, which states the actuary should disclose the valuation date.
Comment	One commentator suggested that the requirement in section 4.1(h) of the second exposure draft to make a statement to the effect that the actuary does not reasonably believe that there are significant risks and uncertainties that could result in material adverse deviation is inappropriate. The commentator indicated that while this is the current standard for US statutory statements of actuarial opinions, extending this requirement to other opinions could lead to instances of misinterpretation by less sophisticated audiences, especially in cases where the perception of materiality could differ among the various audiences (for example, a state workers’ compensation loss certification for a self-insured employer).
Response	The reviewers agreed and have deleted section 4.1(h) and modified section 4.2(e). The reviewers note that for US statutory statements of actuarial opinion, the actuary would still be required to make such disclosures per the NAIC annual statement instructions.
Comment	One commentator stated the disclosure requirements in section 4.1(e) were burdensome and inappropriate for an opinion.
Response	The reviewers do not believe the requirement to be burdensome, as in many cases it could be satisfied through referring to specific items in financial statements. The standard does not require an exhaustive list of disclosures as suggested by the commentator.
Comment	Two commentators noted the references to ASOP No. 41 correspond to an exposure draft rather than the standard in place.
Response	This final version refers to the final version of ASOP No. 41 effective April 1, 2011.

Section 4.2, Additional Disclosures	
Comment	One commentator suggested editing section 4.2(a) to read, “If the actuary is not able to review the prior opining actuary’s work....”
Response	The reviewers agreed and made the change.
Comment	One commentator suggested limiting the disclosure in section 4.2(e) to only those cases where the material adverse deviation would be within the actuary’s range of unpaid claim estimates.
Response	<p>The reviewers did not make this change. First, the reviewers believe material adverse deviation that goes beyond the actuary’s range of unpaid claim estimates can be a very useful thing to disclose. The range of reasonably possible outcomes is generally much wider than the range of reasonable unpaid claim estimates, and to the extent there are significant risks and uncertainties that could lead to an outcome that would result in a material adverse deviation, it is useful to disclose such information, even if such outcomes are outside the actuary’s range of estimates. Second, there is no requirement for an actuary to determine a range of unpaid claim estimates, which would be needed in order to modify the standard as the commentator suggested.</p> <p>The commentator used the phrase “significant risk of material adverse deviation.” The reviewers note the language in the standard is “significant risks and uncertainties that could result in a material adverse deviation,” not “significant risk of material adverse deviation.”</p>



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 37**

**Allocation of Policyholder Consideration
in Mutual Life Insurance Company Demutualizations**

**Developed by the
Task Force on Allocation of Policyholder Equity of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2000
Updated for Deviation Language Effective May 1, 2011**

(Doc. No. 154)

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June 2000

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Allocation of Policyholder Consideration in Mutual Life Insurance Company Demutualizations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 37

This booklet contains the final version of ASOP No. 37, *Allocation of Policyholder Consideration in Mutual Life Insurance Company Demutualizations*.

Background

In the past decade, an increasing number of mutual life insurance companies have converted to stock life insurance companies, sometimes including the formation of a mutual holding company. Demutualizations present important actuarial issues, including the preservation of reasonable policyholder dividend expectations, and the allocation among eligible policyholders of the consideration that may be due them in exchange for their membership rights.

This ASOP deals with actuarial responsibilities with respect to the allocation of policyholder consideration. Actuaries are often involved in many aspects of such allocation, including advising on the actuarial aspects of eligibility of policies for consideration, as well as the allocation of consideration to eligible policyholders.

Exposure Draft

The first exposure draft (published in May 1999) received eighteen comment letters. These comments and the Task Force on Allocation of Policyholder Equity responses were summarized in appendix 2 of the second exposure draft published in December 1999. Eight comment letters were received on the second exposure draft. For a summary of the substantive issues contained in these eight comment letters and the task force's responses, please see appendix 2.

The key change from the second exposure draft was additional clarification regarding the treatment of reinsurance in calculating the actuarial contribution (section 3.2.4(g)).

The Task Force on Allocation of Policyholder Equity and the Life Committee thank all those who commented on the first and second exposure drafts.

The ASB voted in June 2000 to adopt this final standard.

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Task Force on Allocation of Policyholder Equity

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ACTUARIAL STANDARD OF PRACTICE NO. 37

**ALLOCATION OF POLICYHOLDER
CONSIDERATION IN MUTUAL LIFE INSURANCE
COMPANY DEMUTUALIZATIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this standard is to give actuaries guidance in determining the allocation of policyholder consideration when a mutual life insurance company or mutual holding company demutualizes, or in reviewing, advising on, or opining on the actuarial aspects of a proposed allocation; such aspects may include policyholder eligibility.
- 1.2 **Scope**—This standard of practice applies to actuaries who are determining, reviewing, advising on, or opining on the allocation of policyholder consideration during the demutualization of a U.S.-domiciled mutual company. The standard also applies to actuaries performing this work in the demutualization of a non-U.S. mutual company with respect to the U.S. operations of that company in the absence of authoritative guidance in the company's country of domicile.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will apply to any actuarial work performed or opinions issued on or after December 15, 2000.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

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- 2.1 **Actuarial Contribution**—The contribution a particular policy or class of similar eligible policies has made to the company’s statutory surplus and the asset valuation reserve, plus the present value of contributions that the same policy or class of similar eligible policies is expected to make in the future.
- 2.2 **Consideration**—The consideration a policyholder receives in a demutualization in exchange for relinquishing membership rights (sometimes referred to as *policyholder consideration*).
- 2.3 **Demutualization**—The conversion of a mutual company to a stock company.
- 2.4 **Eligibility Date**—Date (or dates) as of which a policy must be deemed in force, according to the plan of conversion, for the policyholder to be eligible to receive consideration.
- 2.5 **Eligible Policyholder**—The owner of one or more policies eligible to receive consideration under the plan of conversion.
- 2.6 **Historical Contribution**—The contribution a particular policy or class of similar eligible policies has made to the company’s statutory surplus and asset valuation reserve in a given year.
- 2.7 **Membership Rights**—Any rights a member of a mutual company has by virtue of ownership of an insurance policy, other than the contractual insurance rights under the policy. Typical membership rights include voting rights and the rights, if any, the member has upon liquidation of the company.
- 2.8 **Mutual Company**—A mutual life insurance company, or a mutual holding company formed in conjunction with the demutualization of a mutual life insurance company.
- 2.9 **Plan of Conversion**—The plan under which a mutual company converts to a stock company.
- 2.10 **Policy**—Unless otherwise specified, the term *policy* (and its plural form, *policies*) in this standard includes both an insurance policy and an annuity contract. In some demutualizations it may also include supplementary contracts.
- 2.11 **Voting Rights**—The right to elect members of the board of directors of the mutual company and the right to vote on any proposed reorganization (including demutualization).

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Section 3. Analysis of Issues and Recommended Practices

The actuary may be requested to determine the allocation of policyholder consideration, or to review, advise on, or opine on the actuarial aspects of policyholder consideration in a demutualization. In doing so, the actuary should be guided by the following:

3.1 **Policyholder Eligibility**—Generally, eligible policyholders receive consideration in exchange for relinquishing membership rights. The plan of conversion will define which policies are eligible (which might include policies in subsidiaries under certain circumstances). The actuary may be involved in drafting this aspect of the plan of conversion. Sections 3.1.1–3.1.2 present issues the actuary should consider in determining, reviewing, advising on, or opining on the actuarial aspects of policyholder eligibility.

3.1.1 **Components of Consideration**—Plans of conversion generally express consideration as the combination of a fixed component and a variable component. A policyholder may be eligible for a fixed component, a variable component, or both. Although eligibility for the fixed component may be related to eligibility to vote in some plans, the fixed component is not necessarily allocated in proportion to voting power. Although eligibility for the variable component may be related to eligibility for dividends or for a distribution upon liquidation in some plans, the variable component is generally not allocated in proportion to dividends or to what would be paid upon liquidation.

3.1.2 **Reinsurance**—With regard to how reinsurance affects eligibility, the actuary should note, in particular, the following:

- a. Policies transferred to another company through assumption reinsurance prior to the eligibility date generally are not eligible for any consideration unless particular facts and circumstances indicate otherwise (for example, if commitments were made to the policyholders or to regulators as part of the assumption reinsurance transaction).
- b. Policies transferred to the demutualizing company from another company through assumption reinsurance or as part of a merger prior to the eligibility date generally are eligible to receive consideration unless particular facts and circumstances indicate otherwise.
- c. Indemnity reinsurance, assumed or ceded, does not affect eligibility.

3.2 **Basis of Allocation**—The actuary is usually responsible for determining that eligible policyholders are treated appropriately in the allocation of consideration. The share of the fixed and variable components of consideration that any one policyholder receives should

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reflect both equity and practicality. Equity requires that actuarial contributions of policies be adequately recognized. Practicality requires that the proposed allocation take into account both administrative feasibility and imperfections in available data. The actuary should consider the following sections concerning the basis of allocation.

3.2.1 **Basis for Allocating the Fixed Component**—The fixed component of consideration should be allocated on a basis that produces a reasonable result in view of the specific circumstances of the converting company. Among other factors, the actuary may consider the company's voting policy. This may entail the following: a review of the voting provisions contained in the company's bylaws, charter, or domiciliary state's law; the way the company has managed voting in practice; and the communications that have been made to policyholders. These factors usually mean that the fixed component is allocated based on each eligible policy (regardless of the size of the policy) or each eligible policyholder (regardless of the number of policies or size of policies).

3.2.2 **Amount Allocated as the Fixed Component**—The actuary should ascertain whether the amount allocated as the fixed component has been determined in a reasonable manner. The determination of the amount to be allocated as the fixed component is a matter in which judgment and practical considerations play a significant role. The actuary should consider whether the total amount to be allocated as the variable component (which is determined as the total amount of consideration less the total amount allocated as the fixed component) is reasonable in relation to the total actuarial contribution for eligible policies. The actuary may also consider the percentages of total consideration that were distributed as fixed consideration and the specific dollar values of fixed consideration allocated to each policy or policyholder in prior demutualizations.

The following approaches to determining the fixed component would usually produce a result that would be consistent with these concepts:

- a. determining the aggregate dollar value to be allocated as the fixed component so that the variable component approximates the value of the total actuarial contribution for eligible policies; or
- b. determining the aggregate dollar value to be allocated as the fixed component so that it approximates the value of the total actuarial contribution for policies not eligible for consideration, including terminated policies.

3.2.3 **Basis for Allocating the Variable Component**—The variable component of consideration should be allocated on the basis of the actuarial contribution. For this purpose, actuarial contributions may be calculated on an individual policy basis or for classes of similar eligible policies. When actuarial contributions are

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calculated for classes of similar eligible policies, they should be allocated to individual policies within classes using parameters that are reasonably obtainable and that tend to drive the primary sources of contribution, such as face amount, reserves, premium, or policy count.

When actuarial contributions are calculated for classes of similar eligible policies, professional actuarial judgment is required in defining the classes. In this regard, the company's financial management practices should be given appropriate weight. The actuary should consider the following in deciding whether to group policies into one class:

- a. Policies that have been priced and managed together should be grouped into one class. For example, it may be appropriate to group all policies within a given premium rate, dividend era, or valuation basis.
- b. Policies that are priced on a contract-by-contract basis, such as group contracts whose terms are individually negotiated between the insurance company and the policyholder, should not be grouped with other policies.

3.2.4 Calculating the Actuarial Contribution—The actuary should design a practical methodology for calculating the actuarial contribution that makes use of available historical and current data. In most cases, there will be periods for which historical studies or data are no longer available. The actuary will have to use approximations for these periods. The actuary should consider what approximations will be needed and the effect of such approximations on the calculated actuarial contribution in designing an appropriate methodology.

The actuary should consider the following in calculating the actuarial contribution:

- a. Historical Contributions—The actuary should accumulate the historical contributions with the historical after-tax investment returns on surplus consistent with the way the company managed the assets corresponding to surplus generated by each line of business.
- b. Discount Rate—The actuary should calculate the value of future contributions using an appropriate discount rate. The actuary may use the net investment income rate on surplus (net of default cost, investment expenses, and taxes), consistent with projections of future contributions to surplus, or a risk-adjusted discount rate appropriate for the line of business or type of policy involved. The actuary should explain in the actuarial report or opinion the basis for selecting the rate.

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- c. Non-Par Lines—The actuary should consider the treatment of earnings on non-par lines in the calculation of contributions made by par policies. One factor to consider is the extent to which dividends on such par policies reflect the earnings on non-par lines.
- d. Individual Equity—The actuary should be mindful that the objective of the calculation of the actuarial contribution is to address individual equity, much like what is done in the determination of premiums and dividends. This means that the actuary should consider techniques such as interpolation within classes of business. It also means that all eligible policies should be included.
- e. Prior Mergers—if the mutual company that is demutualizing is itself the result of a prior merger of two (or more) mutual companies, the actuary should recognize the pre-merger contributions by current policyholders to the prior merger partners. In deciding whether to recognize the relative surplus positions of the prior companies at the time of merger, the actuary should consider any relevant provisions in the merger agreement, the length of time since merger, the amount and nature of new business since merger, and the practice of the company as to commingling the interests of policyholders of the predecessor companies.
- f. Acquisition Price—Where blocks of business have been acquired through assumption reinsurance, the actuary should consider the acquisition cost of the block (as a negative contribution) when determining the actuarial contribution.
- g. Reinsurance—The characteristics of each reinsurance program should be considered in light of the purpose of the program and the long-term economic impact on a block of business and the company as a whole. Reinsurance is usually reflected in the calculation of the actuarial contribution if it is risk reinsurance. However, reinsurance whose primary purpose is surplus relief is usually ignored.

3.2.5 Treatment of Negatives—Actuarial contributions may be positive or negative. The actuary should consider the following:

- a. Where the actuarial contribution for a policy is negative, it is set to zero before performing the allocation so that the policy does not receive a variable component of consideration. Where the actuarial contribution of the policy is calculated in separate pieces (such as base policy and rider), the pieces may be combined algebraically and any negative sum set to zero, or negatives may be individually set to zero. The company's

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practices as to calculating dividends in pieces or in combination should guide this choice.

- b. Where two or more policies are linked for experience-rating purposes, either prospective or retrospective, they are usually linked for allocation purposes. Where one or more of such policies has terminated, the actuary should be careful to determine the actuarial contribution of the remaining policy since cross-subsidies usually will not have been recorded.
 - c. Where the total actuarial contribution for a line of business is negative (before any adjustments described in section 3.2.5(a)), different practices have been used. Most prior demutualizations have left any positive actuarial contributions in that line unchanged (so those policies received a variable component of consideration), but in certain circumstances no variable consideration has been given to any policy in that line. In deciding which approach to use, the actuary should consider the company's financial management of the line and the pooling of risks across years. (*Line of business* is used here to reflect the way the company has categorized its business for management purposes, as opposed to those lines of business shown in the annual statement.)
- 3.3 **Experience Factors**—In calculating actuarial contributions, the actuary may use experience factors determined for various classes of eligible policies. These experience factors fall into two distinct categories: experience factors related to past experience, which would be used to calculate historical contributions; and experience factors related to anticipated future experience, which would be used to calculate prospective contributions to surplus.

The actuary should bear in mind the guidance given by ASOP No. 23, *Data Quality*, when performing this work. Establishing the appropriate historical experience may raise issues that are not considered in ASOP No. 23. In these cases the actuary should obtain appropriate data reasonably available under the circumstances.

- 3.3.1 **Experience Factors Related to Past Experience**—In selecting experience factors related to past experience, the actuary should take into account the company's past practices with respect to determining the actual experience that served as the basis for dividend allocations, or to determine other nonguaranteed elements. The actuary should review available historical records of experience studies, actuarial analyses, and other reliable information. The historical experience factors should represent the actual experience of the company, without any implicit or explicit margins for conservatism.

To the extent that reliable company data or the experience of a policy or block of policies are not available, the actuary may have to refer to indirect sources of data

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for guidance in the selection of historical experience factors. These might include historical annual statements, reserve valuation tabulations, contemporaneous pricing assumptions, or industry-wide experience studies. It is appropriate to reflect the pooling of experience data across various classes of policies (such as mortality experience data) in determining historical experience factors, particularly if such pooling was used historically in the dividend allocation process.

Generally, expenses, investment income, and federal income tax are allocated items rather than items directly charged to lines of business. The actuary should understand how the allocation was performed at different times in the past. The actuary should generally accept the allocation to the annual statement line shown in the annual statement, although in particular circumstances there may be reasons to modify it. However, the actuary will still have to perform allocations within a line. The actuary should try to determine how the company previously approached allocation and use that approach within a line, unless there is reason to modify it.

3.3.2 **Experience Factors Related to Anticipated Future Experience**—The considerations the actuary should use to select experience factors related to anticipated future experience may differ between policies included in a closed block and policies not included in a closed block, as noted below.

a. Experience factors for classes of policies included in a closed block should be consistent with the assumptions used to calculate the funding of the closed block (see ASOP No. 33, *Actuarial Responsibilities with Respect to Closed Blocks in Mutual Life Insurance Company Conversions*). Actual experience will almost certainly be different from that assumed in funding the closed block.

To the extent that such differences accrue to the closed block policyholders (because of the closed block mechanism), the funding assumptions should be used without change for the actuarial contribution assumptions. Examples of these assumptions include anticipated future mortality, morbidity, termination, investment income rates, and policyholder dividends.

To the extent that such differences do not accrue to the closed block policyholders, best-estimate assumptions should be used for the actuarial contribution assumptions. An example is expenses, because actual expenses are often not charged to the closed block. Income tax is an assumption that might fall into either category depending on how the closed block was constructed.

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- b. For policies not included in a closed block, the actuary should generally select experience factors that are best-estimate assumptions for anticipated future experience. (For a discussion of the meaning of *best-estimate assumptions*, see ASOP No. 10, *Methods and Assumptions for Use in Life Insurance Company Financial Statements Prepared in Accordance with GAAP*.) Where applicable, anticipated future experience should be based on recent experience and expected trends in experience in the company that is demutualizing (or in the industry in general, if the company's own experience is not credible).

For lines of business that exhibit cyclical trends in experience, the anticipated future experience should reflect past results over at least one complete experience cycle. The calculation of the value of future contributions to surplus should take into account any material restrictions on future profits or margins imposed as part of the plan of conversion or otherwise.

- 3.3.3 **Other Approaches**—In some circumstances, the actuary may calculate the present value of historical or future contributions to surplus directly, using a formula for calculating annual or cumulative contributions to surplus that reflects the company's approach to assessing risk or profit charges in its pricing or dividend allocation methodology.

Such an approach might be appropriate, for example, in the case of a class of large group policies where explicit risk or profit charges have been made at the individual contract experience fund level. In such circumstances it will not be necessary for the actuary to select specific experience factors other than those needed prospectively to project the persistence and growth of such charges. However, the actuary should consider whether the company has used credible and realistic experience data to reflect the actual cost of claims and expenses in determining policyholder experience funds.

- 3.4 **Continuity Issues**—When addressing eligibility and calculating actuarial contributions, the actuary should take into account the effect of status changes for any policy that has changed status since its original issue date. Some companies effect these changes in status by amending a policy, and others by terminating one policy and issuing a new policy. Subject to the limits of practicality and the availability of data, the actuary should consider the following:

- a. the current status (for example, participating or nonparticipating) and the prior status;
- b. the circumstances of any company-sponsored program allowing or encouraging policyholders to change or replace their policies;

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- c. the issue date of the original policy and the issue date of the new policy, as appropriate;
- d. charges or assumptions specific to the type of policy change (for example, term conversion costs or provisions for adverse mortality in the case of conversions, as appropriate);
- e. whether the new policy was issued at market price or reflected gains or losses in the old policy; and
- f. changes in coverage (for example, changes in death benefit, mandated changes to individual health policies, or termination of part of a group contract).

Section 4. Communications and Disclosures

- 4.1 **Reliance on Data Supplied by Others**—The actuary may rely on data supplied by another. In doing so, the actuary should disclose both the fact and the extent of such reliance. The accuracy and comprehensiveness of data supplied by others are the responsibility of those who supply the data. However, the actuary should review the data for reasonableness and consistency to the extent practicable. For further guidance, the actuary is directed to ASOP No. 23.
- 4.2 **Reliance on Asset Cash-Flow Projections Supplied by Others**—The actuary may rely on cash-flow projections or other analyses of assets supplied by others—for example, projections of real estate or equity assets. In doing so, the actuary should disclose both the fact and the extent of such reliance. The accuracy and soundness of projections supplied by others are the responsibility of those who supply the projections. However, the actuary should review the projections for reasonableness and consistency to the extent practicable.
- 4.3 **Actuarial Report or Statement of Actuarial Opinion**—An actuary who performs professional services subject to this standard should issue a written actuarial report or statement of actuarial opinion to the employer or client concerning the allocation of policyholder consideration, unless another actuary advising the same entity is issuing such a report or statement. This actuarial report or statement of actuarial opinion should express an opinion on the appropriateness of the allocation, and may express an opinion concerning the classes of policies deemed eligible to receive consideration in light of the provisions of this standard.

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4.4 **Disclosures**—The actuary should include the following, as applicable, in the actuarial report or statement of actuarial opinion:

- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

When a mutual life insurance company demutualizes fully (rather than converting to a mutual holding company structure), or when a mutual holding company demutualizes, the value of the mutual entity, generally in its entirety and before any external investment, is distributed in some form to the eligible policyholders or members of that entity. The Society of Actuaries Task Force on Conversion of Mutual Life Insurance Companies identified the allocation of policyholder consideration as an actuarial matter in its 1987 report, “Report of the Task Force on Mutual Life Insurance Company Conversion” (Society of Actuaries, *Transactions* 39 (1988): 295–391) (hereafter referred to as the *Garber Committee Report*). The Garber Committee Report considered the determination of the aggregate *amount* of policyholder consideration to be a nonactuarial matter. A number of U.S. life insurance companies have demutualized fully to date, and several more have announced their intent to do so. In almost all of these demutualizations, an actuary has been responsible for the allocation of policyholder consideration and has provided an opinion that the allocation is fair.

This actuarial standard of practice (ASOP) reflects what is considered good practice used in the allocation of policyholder consideration up until this time. The unique circumstances and characteristics of each mutual company, however, make it impossible to state with confidence that the goal of determining an equitable allocation can be met in all future transactions without deviating from this standard in some way as yet unforeseen. The actuary is best qualified, of all participating professionals, to assess and analyze the particular circumstances and operating philosophies of the mutual company, as demonstrated over its history, in determining what actually constitutes adequate recognition of a policy’s contribution to company value and to recommend an allocation with due recognition of all pertinent facts.

Current Practices

Actuarial Contribution—Some early demutualizations calculated the actuarial contribution on a historical basis only; most recent demutualizations have used the historical plus prospective basis for the actuarial contribution.

Eligibility—To be eligible to receive any policyholder consideration, a policy must be in force on a specific date (or dates) or be in force within a specific range of dates. The date or dates will

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be defined in the plan of conversion and may be influenced by any applicable state statute. Typical examples of eligibility dates include the following:

1. The policy must be in force on the date that the board of directors adopts the plan of conversion.
2. The policy must be in force on the effective date of conversion.
3. The policy must be in force on both the date that the board of directors adopts the plan and on the effective date of conversion.
4. The policy must be in force on the date that the board of directors adopts the plan or must have been in force on any prior date within a fixed period (for example, two years).

Unless the eligibility date is defined in a manner similar to that in (4) above, terminated policies do not usually qualify as eligible.

Amount Allocated as the Fixed Component—Virtually all past demutualizations in the U.S. have featured an allocation of policyholder equity in part based on a fixed amount per policy or per policyholder. The fixed or per capita component of consideration in past demutualizations has had values ranging from approximately \$25 to over \$1,000 per policy or per policyholder. The total value of the portion of consideration allocated as a fixed component has represented from about 10% to about 25% of the total value of the consideration in these same demutualizations. The fixed component of consideration has often been considered to be compensation for the loss of the policyholders' right to vote for directors and to vote on other important matters, such as a merger with another mutual company. The Garber Committee Report noted that "these values [i.e., membership values] might reflect some compensation for the cancellation of the less tangible attributes of membership, the right to vote for directors, and so on." In mentioning compensation for less tangible membership rights, the Garber Committee Report clearly referred to the concept of the fixed component. Nevertheless, there has not always been an exact proportional relationship between a policyholder's voting power and the amount of fixed component he or she receives. Moreover, eligibility for the fixed component may not be directly related to eligibility to vote in some plans.

Amount Allocated as the Variable Component—The variable component of consideration has often been considered to be compensation for policyholder rights, other than voting rights, that are relinquished in a demutualization. This would include the right to receive a share of the net value of the company in the event of a liquidation. Probably the most significant right that participating policyholders have is the right to receive dividends as declared by the board of directors. This right is generally contractual and is not canceled as the result of a demutualization.

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Legitimacy of Historical Practice—The calculation of the actuarial contribution by dividend class is often accomplished by calculation of historical asset share accumulations. These calculations typically have been made for pivotal issue years and issue ages. Until recently, these calculations have not differentiated between such factors as gender, smoking status, or premium band, on the implicit assumption that the contribution principle would tend to equalize profit results over time for the various dividend classes. Generally, an existing dividend class has not been split for the purposes of calculating the actuarial contribution in the context of demutualization to recognize factors that have not been recognized historically by the company in determining dividends.

Even though asset shares calculated to set dividend scales for individual participating business normally reflect lapses and other terminations in all years, the effects of past lapses generally have been ignored or removed from the calculation of actuarial contributions for all lines of business. This follows from a general feeling among practitioners who have worked with demutualizations that survivorship gains and losses from the past should not accrue to a particular policy, but rather should be spread over all eligible policies. Some other considerations that led to deciding not to recognize past lapses in such calculations include the following:

1. the unavailability of accurate and detailed historical lapse studies;
2. the anomalous pattern of actuarial contributions by issue age, issue year, plan, and rate book that would result; and
3. the precision and uniformity, over time, of class delineations, the lack of which might result in significant variations between adjacent cells.

Converted Policies, Replacements, and Policy Exchanges—In calculating actuarial contributions, actuaries have generally considered some or all of the following aspects of converted policies, replacements, and exchanges:

1. the nature of the current policy;
2. charges assessed by the company in connection with the conversion, replacement, or exchange; and
3. any differences in experience (for example, mortality or morbidity) that are observed or expected as a result of the conversion, replacement, or policy exchange.

If the current policy has been promised dividends and related treatment accorded an otherwise similar policy that did not result from a conversion, replacement, or exchange, the actuarial contribution generally will have reflected only (1) above, and not (2) or (3).

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Supplemental Contracts and Settlement Options—In calculating actuarial contributions, actuaries have generally considered the status of the current policy (participating or nonparticipating) and the date the current policy was issued. If no new policy was issued when the supplemental contract or settlement option was purchased, actuaries have sometimes considered the appropriateness of using a basis that considers the original policy.

Change in Policy Conditions Due to Update Programs—In calculating actuarial contributions, actuaries have generally considered the changes to policy conditions as a result of update programs and, where practicable, reflected them, as appropriate, in the actuarial contribution calculations.

Non-Par Coverages Associated with Terminated Group Contracts—In calculating actuarial contributions, actuaries have generally considered the status of the original group contract, the owner of the contract, the company's approach for calculating actuarial contributions for current group contracts, and the beneficiary of the actuarial contribution associated with current group contracts. In some cases, actuaries have decided that no actuarial contribution should be calculated with respect to run-off coverages on terminated group contracts.

Data Problems—Some of the particular data problems that actuaries have encountered include the following:

1. Group annuity policies may have been in force for fifty years or more, but detailed records in some cases have not been available back to the issue date of the older policies. Actuaries have had to determine some equitable method of estimating actuarial contributions for periods before individual policy records were available.
2. The problem of unavailable records in some cases has been extensive with group term and health insurance, where it is not necessary to keep a long-term history of asset fund build-ups. Although group insurance policies will usually have an experience fund (if the policy is dividendable), companies may not have retained the history of this fund for more than five to ten years.
3. In some cases, the experience studies to support mortality and pricing philosophy have been difficult to find.

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Appendix 2

Comments on the Second Exposure Draft and Task Force Responses

The second exposure draft of the proposed standard was circulated for review in December 1999, with a comment deadline of May 1, 2000. Eight letters of comment (two from the same person) were received. The Task Force on Allocation of Policyholder Equity carefully reviewed each comment letter. Summarized below are the significant issues or questions contained in the comment letters, printed in roman type. The task force's responses appear in **boldface**.

General Comments

One commentator took issue with the statement in appendix 1, which was quoted from the Garber Committee Report, that the determination of the aggregate amount of policyholder consideration is a nonactuarial matter. **The task force notes that the aggregate amount of policyholder consideration in most demutualizations has been set by the marketplace. In any event, the task force believes that the determination of the aggregate value to be distributed to policyholders is beyond the scope of this standard.**

One commentator suggested that the ASB is not qualified to determine whether a method of allocation is “fair and equitable.” **The task force believes that actuaries are the appropriate professionals to form and state an opinion as to whether a plan of conversion is appropriate from an actuarial perspective, and the ASB is the proper body to set standards for actuaries performing this role.**

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One commentator questioned the use of the word “reasonable” in the context of “reasonable dividend expectations.” **The task force believes that the term “reasonable dividend expectations” is generally well understood as defined in ASOP No. 33.**

Section 2. Definitions

Section 2.1, Actuarial Contribution—One commentator questioned whether the phrase “contribution...to the company’s surplus” should be clarified to indicate that this is the amount remaining in the current surplus account and is, thus, net of all previous policyholder dividends paid or apportioned. **The task force agrees that this is the proper meaning, but did not believe that further clarification was necessary.**

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Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Policyholder Eligibility—One commentator noted that the proposed standard did not include any discussion of the fact that some policyholders may purchase a policy from a mutual company that has announced its intention to demutualize solely or primarily to receive consideration. Noting that such activity could have the impact of diluting the value of the consideration paid to other policyholders, this commentator suggested that this would be inequitable and that the proposed standard might be revised to specify that the actuary should consider this in setting the allocation basis. Specifically, the commentator suggested that only policies issued prior to the announcement of the company’s intent to demutualize would be eligible for a fixed component. **The task force recognizes that the question of which policyowners are eligible to receive consideration is frequently addressed in the demutualization statutes of the states. Such statutes often specify particular eligibility dates. If policies are in force on these dates, they are eligible to receive consideration.** The task force notes that policyholders receive consideration in exchange for relinquishing their membership rights and that newly issued policies generally have membership rights similar to policies that have been in force for longer periods of time. Moreover, as the commentator acknowledges, it would not be appropriate to attempt to classify policyholders by their intent in purchasing their policies, even if it were feasible. The task force believed that the standard should not be amended to address the situation pointed out by the commentator.

Section 3.2.3, Basis for Allocating the Variable Component—One commentator recommended that the proposed standard require the actuary to obtain an opinion of counsel as to whether the actuarial contribution method as defined in the proposed standard violates applicable law. In particular, this commentator focused on the fact that the definition of actuarial contribution in the proposed standard includes both a historical and a prospective component. **The task force is aware that there has been controversy over the correct interpretation of certain state statutes with respect to whether or not it is appropriate to take future expected profits into account in the allocation of consideration. In cases where such controversy could potentially arise, the task force expects that the actuary would act with appropriate professional discretion to assure that the methodology used complied with applicable law.** A number of state statutes are quite clear about the issue, and there is substantial precedent in certain states sanctioning the methodology set forth in the standard. Therefore, the task force does not believe that a blanket requirement for the actuary to obtain opinion of counsel on this issue is necessary. Furthermore, the task force notes that section 1.2, Scope, provides that “if a conflict exists between this standard and applicable law or regulation, compliance with applicable law or regulation is not considered a deviation from this standard.” Thus, the actuary is not required to apply the methodology in section 3.2.3 when, in the actuary’s professional judgment, this method conflicts with applicable law or regulation.

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Three commentators offered the opinion that the inclusion of a prospective component in the definition of actuarial contribution *per se* violated the contractual rights of mutual company policyholders. One of the bases cited for this opinion was the belief that mutual insurers operated on a basis in which insurance is provided “at cost” and, therefore, over their entire life, mutual company policies do not make a permanent contribution to surplus. If this was the case, the actuarial contribution, including both prospective and retrospective components, would be zero, and thus there would be no basis for the allocation of variable shares. These commentators point out that if the actuarial contribution were calculated with reference only to the historical component, on the other hand, there would presumably be a non-zero result for the typical company with positive surplus. One of these commentators expressed the opinion that use of both historical and prospective components in the calculation of the actuarial contribution defeats the expectation that the mutual policyholder will obtain insurance at cost.

The task force believes that the definition of actuarial contribution contained in the standard is appropriate. The standard takes no position on whether the “entity capital” model, where policies make permanent contributions to surplus, or the “revolving fund” model, where all contributions to surplus are returned over a policy’s life, is preferable as a philosophy for setting dividends for a mutual company. The task force does note, however, that different opinions on this issue have been expressed in actuarial literature over the years. (See, for example, “Some Actuarial Considerations for Mutual Companies,” TSA, XXXI (1979) by Robin B. Leckie.) The rationale for the definition of actuarial contribution as including both a historical and a prospective component is not based on adherence to one or the other of these theoretical models. It is predicated, rather, on the concept that the allocation of consideration should be based, in part, on the relative economic value of the policy to the company. The task force believes that actuarial contribution, as defined in the standard, represents a fair estimate of this economic value and is preferable to an alternative definition that ignores the value of future expected contributions to surplus. The task force notes that the definition of actuarial contribution in the standard has resulted in positive actuarial contributions over a broad range of policies in the several actual demutualizations where it has been applied. The task force also notes that the adoption of such a definition of actuarial contribution has no impact on a mutual company’s dividend-setting practices or pricing philosophy, either before or after demutualization (and thus does not affect the expectation that the mutual policyholder may obtain insurance at cost).

Section 3.2.4(g), Reinsurance—One commentator, while agreeing in general with the distinction between risk and surplus relief reinsurance, noted that the complexity of some agreements will require consideration of both their structure and purpose. **The task force agreed, and added a sentence to that effect.**

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Section 4. Communications and Disclosures

Section 4.1, Reliance on Data Supplied by Others, and section 4.2, Reliance on Asset Cash-Flow Projections Supplied by Others—One commentator opined that the actuary should be required to review data and projections of others, and that the modifying phrase “when practicable” in sections 4.1 and 4.2 was unduly lenient. **The task force notes that practical limitations do exist as to what can be reviewed. Nevertheless, the language in both sections was modified to make it clear that the actuary should perform this review “to the extent” practicable.**

Prior Commentary and Responses from the First Exposure Draft

One commentator repeated the earlier suggestion that there should be a statement of policy or policies that will guide the demutualization, similar to that required by ASOP No. 1, *The Redetermination (or Determination) of Non-Guaranteed Charges and/or Benefits for Life Insurance and Annuity Contracts*, for redetermination of nonguaranteed elements. **In contrast to determination of nonguaranteed elements, the allocation of policyholder consideration occurs at a point in time and does not involve the ongoing application of consistent policies over a period of time. Observers are thus able to assess the appropriateness of the single result of the allocation process without reference to some additional statement of principles put forth by the converting company. In any case, the standard does not prevent a converting company from putting forth such principles. The task force still does not believe that a requirement for a statement of principles of allocation is necessary.**



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of Practice
No. 38**

Revised Edition

**Catastrophe Modeling
(for All Practice Areas)**

**Developed by the
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General Committee of the
Actuarial Standards Board**

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July 2021

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Catastrophe Modeling (for All Practice Areas)

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 38

This document contains the revision of ASOP No. 38, *Catastrophe Modeling (for All Practice Areas)*.

History of the Standard

The ASB first began work on a standard for modeling in the late 1990s. Motivated primarily to address the role catastrophe modeling of earthquakes and hurricanes played in casualty ratemaking, this work was focused on the use of specialized models where the actuary would have to rely on a model that was developed by professionals other than actuaries. As a result of this work, the ASB approved ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise*, in June 2000 with the scope of the standard limited to the Property/Casualty area of practice. At the time, this was the only ASOP that specifically addresses modeling.

Over the ensuing years, the number and importance of modeling applications in actuarial science has increased, with the results of actuarial models often entering financial statements directly. Recognizing this trend, the ASB asked the Life Committee in 2010 to begin work on an ASOP focused on modeling. The Life Committee formed a task force to address this issue and, in February 2012, a discussion draft titled *Modeling in Life Insurance and Annuities* was released. Nineteen comment letters were received.

Based upon this feedback and numerous other discussions on the topic of modeling, in December 2012 the ASB created two multidisciplinary task forces under the direction of the General Committee: i) a general Modeling Task Force, charged with developing an ASOP to address modeling applications in all practice areas, and ii) a Task Force to consider expanding ASOP No. 38 to all practice areas while focusing exclusively on using catastrophe models.

An exposure draft titled *Modeling* was released in June 2013 with a scope that provides guidance to actuaries when selecting, designing, building, modifying, developing, or using models when performing actuarial services. ASOP No. 56, *Modeling*, was adopted by the ASB in December 2019. Changes have been made to this exposure draft of ASOP No. 38 to be consistent with ASOP No. 56 and other recent ASOPs.

The exposure draft of this revision of ASOP No. 38 was the work of the Catastrophe Modeling Task Force, whose membership has experience in life insurance, health insurance, property/casualty insurance, and enterprise risk management.

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At the direction of the ASB, this standard was developed to apply to all practice areas and all forms of catastrophe models, including natural catastrophes such as hurricanes, earthquakes, and severe convective storms, and other catastrophes such as terrorist acts and pandemics.

Exposure Draft

The exposure draft was approved in September 2020 with a comment deadline of January 15, 2021. Four comment letters were received and considered in making changes that were reflected in the final ASOP.

Notable Changes from the Exposure Draft

Notable changes made to the exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Section 1.2, Scope, was revised to provide additional guidance to actuaries whose actuarial services involve reviewing or evaluating models.
2. In section 2, Definitions, the definition of “catastrophe model” was expanded to include a definition of model.
3. Section 3.2, Appropriate Reliance on Experts (now titled Catastrophe Models Developed by Experts), was revised to adopt language from ASOP No. 56, section 3.5(b).
4. An existing ASOP No. 38 example regarding validation to evaluate results derived from other models was reinserted into section 3.5.
5. A disclosure requirement for the extent of reliance on experts was added to section 4.1(b) and (c).

Notable Changes from the Existing ASOP

A cumulative summary of the notable changes from the existing ASOP are summarized below. Notable changes do not include additional changes made to improve readability, clarity, or consistency.

1. The ASOP was revised to apply to catastrophe models only and to all practice areas.
2. The scope was expanded to include the activities “selecting, reviewing, and evaluating” models in addition to the existing activity of “using” a model when performing actuarial services.
3. The scope was expanded to clarify that if the actuary determines that the guidance in the ASOP conflicts with the guidance in ASOP No. 56, the guidance of this ASOP will govern.

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4. A new section specifically addressing reliance on data or other information supplied by others (section 3.8) was added.
5. The guidance on documentation (section 3.9) was updated and expanded to be consistent with current ASOPs.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB would like to posthumously thank Martin M. Simons for his contribution to the ASOP No. 38 task force.

The ASB voted in July 2021 to adopt this standard.

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Catastrophe Modeling Task Force

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General Committee of the ASB

Susan E. Pantely, Chairperson
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Darrell D. Knapp, Chairperson
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David E. Neve Patrick B. Woods

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 38

**CATASTROPHE MODELING
(FOR ALL PRACTICE AREAS)**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to selecting, using, reviewing, or evaluating **catastrophe models**.
- 1.2 **Scope**—This ASOP applies to actuaries in any practice area when performing actuarial services with respect to selecting, using, reviewing, or evaluating **catastrophe models** to assess risk, including but not limited to **models** of hurricanes, earthquakes, severe convective storms, terrorist acts, and pandemics. This standard applies to the selection, use, review, or evaluation of **catastrophe models**, whether or not they are proprietary in nature.

If the actuary's actuarial services involve reviewing or evaluating **catastrophe models**, the reviewing or evaluating actuary should apply the guidance in this standard to the extent practicable within the scope of the actuary's assignment.

In addition to this standard, the actuary should follow the guidance in ASOP No. 56, *Modeling*, when selecting, using, reviewing, or evaluating **catastrophe models**. If the actuary determines that the guidance in this ASOP conflicts with the guidance in ASOP No. 56, the guidance of this ASOP will govern.

This standard does not apply to **models** of operational risks. This standard also does not apply to **models** of economic risks that deal with instances of extreme events such as hyper-inflation or a stock market collapse.

This standard also does not apply when the actuary is only designing, developing, or modifying a **catastrophe model** (or a portion of a **catastrophe model**).

If the actuary departs from the guidance set forth in this ASOP in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

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- 1.3 **Cross References**—When this ASOP refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this ASOP to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work performed on or after December 1, 2021.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Assumption**—A type of explicit **input** to a **catastrophe model** that is derived from **data**, represents possibilities based on professional judgment, or may be prescribed by law or others. When derived from **data**, an **assumption** may be statistical, financial, economic, mathematical, or scientific in nature, and may be described as a **parameter**.
- 2.2 **Catastrophe Model**—A **model** of low-frequency events with high-severity or widespread potential effects. **Catastrophe models** may be used to explain a system, to study effects of different components, or to derive estimates.
- 2.3 **Data**—Facts or information that are either direct **input** to a **catastrophe model** or inform the selection of **input**. **Data** may be collected from sources such as records, experience, experiments, surveys, observations, benefit plan or policy provisions, or **output** from other **models**.
- 2.4 **Expert**—One who is qualified by knowledge, skill, experience, training, or education to render an opinion concerning the matter at hand.
- 2.5 **Input**—**Data** or **assumptions** used in a **catastrophe model** to produce **output**.
- 2.6 **Intended Purpose**—The goal or question, whether generalized or specific, addressed by the **catastrophe model** within the context of the assignment.
- 2.7 **Model**—A simplified representation of relationships among real world variables, entities, or events using statistical, financial, economic, mathematical, non-quantitative, or scientific concepts and equations. A **model** consists of three components: an information **input** component, which delivers **data** and **assumptions** to the **model**; a processing

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component, which transforms **input** into **output**; and a results component, which translates the **output** into useful business information.

- 2.8 **Output**—The results of the **catastrophe model** including, but not limited to, point estimates, likely or possible ranges, and **data** or **assumptions** (as **input** for other **models**), behavioral expectations, or qualitative criteria on which decisions could be based.
- 2.9 **Parameter**—A type of statistical, financial, economic, mathematical, or scientific value that is used as **input** to **catastrophe models**. Examples of **parameters** include expected values in probability distributions and coefficients of formula variables.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—In performing actuarial services, the actuary may find it appropriate to select, use, review, or evaluate **catastrophe models**. When selecting, using, reviewing or evaluating a **catastrophe model**, the actuary should do the following:
 - a. determine the appropriate level of reliance on **experts**;
 - b. have a basic understanding of the **catastrophe model**;
 - c. evaluate whether the **catastrophe model** is appropriate for the **intended purpose**;
 - d. determine that appropriate validation of the **catastrophe model** and **output** has occurred; and
 - e. determine the appropriate use of the **catastrophe model** and **output**.The actuary’s level of effort in understanding and evaluating a **catastrophe model** should be consistent with the **intended purpose** and the **catastrophe model output**’s materiality to the results of the actuarial analysis.
- 3.2 **Catastrophe Models Developed by Experts**—When selecting, using, reviewing, or evaluating a **catastrophe model** developed by **experts**, the actuary should take into account the following:
 - a. whether the individual or individuals who developed the **catastrophe model** are **experts** in the applicable field;
 - b. the extent to which the **catastrophe model** has been reviewed or validated by **experts** in the applicable field, including known differences of opinion among

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experts concerning aspects of the **catastrophe model** that could be material to the actuary's use of the **catastrophe model**; and

- c. whether there are industry or regulatory standards that apply to the **catastrophe model** or to the testing or validation of the **catastrophe model**, and whether the **catastrophe model** has been certified as having met such standards.

The actuary may rely on **experts** in the applicable field in the evaluation of items in section 3.2(a)-(c) and should disclose the extent of such reliance.

- 3.3 **Understanding of the Catastrophe Model**—The actuary should be familiar with the basic components of the **catastrophe model** and understand both the user **input** and the **catastrophe model output**, as discussed below.

- 3.3.1 **Catastrophe Model Components**—The actuary should be familiar with the basic components of the **catastrophe model** and have an understanding of how such components interrelate within the **catastrophe model**. In addition, the actuary should identify which fields of expertise were used in developing or updating the **catastrophe model** and should make a reasonable effort to determine if the **catastrophe model** is based on generally accepted practices within the applicable fields of expertise. The actuary should also be familiar with how the **catastrophe model** was tested or validated and the level of independent **expert** review and testing.

- 3.3.2 **User Input**—The actuary should take reasonable steps to confirm that the precision and accuracy of the user **input** are consistent with the **intended purpose** and should refer, as applicable, to ASOP No. 23, *Data Quality*, when selecting, using, or evaluating **data** used in the **catastrophe model**. Certain user **input** may be required to produce **catastrophe model output** for the specific application. User **input** can include **assumptions** or **data**. If the **catastrophe model** requires user **input**, the actuary should evaluate the reasonableness of the user **input** and should have an understanding of the relationship between the user **input** and **catastrophe model output**.

- 3.3.3 **Catastrophe Model Output**—The actuary should determine that the **catastrophe model output** is consistent with the **intended purpose**.

- 3.4 **Appropriateness of the Catastrophe Model for the Intended Purpose**—The actuary should evaluate whether the **catastrophe model** is appropriate for the **intended purpose** and take into account the following:

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- 3.4.1. **Applicability of Historical Data**—To the extent historical **data** are used in the development of the **catastrophe model** or the establishment of **catastrophe model parameters**, the actuary should take into account the adequacy of the historical **data** in representing the range of reasonably expected outcomes consistent with current knowledge about the phenomena being analyzed.
- 3.4.2. **Developments in Relevant Fields**—The actuary should make a reasonable effort to be aware of significant developments in relevant fields of expertise that are likely to materially affect the **catastrophe model**.
- 3.5 **Output Validation**—The actuary should validate that the **output** reasonably represents that which is being modeled. Depending on the **intended purpose**, **output** validation may include the following:
- a. comparing **output** to those of an alternative **model(s)**, where appropriate;
 - b. comparing the **output** produced by the **catastrophe model** with historical observations, if applicable;
 - c. comparing the consistency and reasonableness of relationships within the **output**; and
 - d. evaluating the reasonableness of changes in the **output** due to variations in the user **input**.
- 3.6 **Appropriate Use of the Catastrophe Model and Output**—The actuary should evaluate the reasonableness of the **catastrophe model output**, considering the **input** and the **intended purpose**. The actuary should take into account the limitations of the **catastrophe model** and use professional judgment to determine whether it is appropriate to use the **catastrophe model output**. The actuary should also use professional judgment to determine whether any adjustments to the **catastrophe model output** are needed to meet the **intended purpose**. The actuary should disclose any such adjustments in accordance with section 4.1.
- 3.7 **Reliance on Another Actuary**—The actuary may rely on another actuary who has selected, used, reviewed, or evaluated the **catastrophe model**. However, the relying actuary should be reasonably satisfied that the other actuary is qualified to select, use, review, or evaluate the **catastrophe model** in accordance with applicable ASOPs, and the **catastrophe model** is appropriate for the **intended purpose**. The actuary should disclose the extent of any such reliance.

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- 3.8 **Reliance on Data or Other Information Supplied by Others**—When relying on **data** or other information supplied by others, the actuary should refer to ASOP No. 23 and ASOP No. 41, *Actuarial Communications*, for guidance.
- 3.9 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing documentation, the actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work and should document the steps taken to comply with this standard in light of proprietary aspects of the **catastrophe model**, if any. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 23, 41, and 56. In addition, the actuary should disclose the following in such actuarial reports, as appropriate:
- a. the **catastrophe model** used and the **intended purpose**;
 - b. the methodology used to validate the **catastrophe model** developed by **experts** (see section 3.2);
 - c. the extent of reliance on **experts** (see section 3.2);
 - d. a description of the user **input** that was incorporated into the **catastrophe model** (see section 3.3.2);
 - e. a description of adjustments made to the **catastrophe model output** (see section 3.6); and
 - f. the extent of any reliance placed upon the work of another actuary (see section 3.7).
- 4.2 **Additional Disclosures in an Actuarial Report**—The actuary also should include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material **assumption** or method was prescribed by applicable law;

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- b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material **assumption** or method selected by a party other than the actuary; and
 - c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this ASOP.
- 4.3 **Confidential Information**—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Hurricane Andrew in 1992 and the Northridge Earthquake in 1994 led actuaries involved in evaluating hurricane and earthquake exposures to recognize the severe inadequacy of the traditional, empirical actuarial methods used for ratemaking for these exposures. Recognizing the need to replace these methods, many actuaries began using stochastic computer simulation models for their actuarial analysis of hurricane and earthquake exposure. Computer simulation models had been commonly used for some time by actuaries and others for the purpose of evaluating probable maximum loss but had not been widely used for ratemaking.

Over time, the output from catastrophe models became commonly used by property/casualty actuaries in developing rates for catastrophic perils as well as many other risk management purposes.

Current Practices

Catastrophe models are now widely used by actuaries in all practice areas for risk management analyses and calculating expected losses due to hurricanes, earthquakes, and terrorist acts. More recently, catastrophe models have also been developed to simulate wildfires, severe convective storms, tsunamis, and pandemics.

In addition, due to changes in regulations and financial reporting requirements, the number and importance of modeling applications in actuarial science has increased, with the results of actuarial models often entering financial statements directly.

Lastly, due to the evolution of enterprise risk management (ERM) practices and regulations, there has been increased use of catastrophe modeling as part of insurer stress testing and risk management across all practice areas. This trend is likely to continue to evolve and heighten in light of the emergence of the novel coronavirus and the COVID-19 pandemic.

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Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of the proposed revision of ASOP No. 38, *Catastrophe Modeling (for All Practice Areas)*, was issued in September 2020 with a comment deadline of January 15, 2021. Four comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ASOP No. 38 Task Force carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the ASOP No. 38 Task Force and the ASB General Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the ASOP No. 38 Task Force, the ASB General Committee, and the ASB. Also, the section numbers and titles used in appendix 2 refer to those in the exposure draft, which are then cross referenced with those in the final ASOP.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator requested a clearer definition of what is excluded from the scope of ASOP No. 38, noting that catastrophe models can be used to infer economic impacts beyond direct claims and that novel catastrophic perils may fall into a gray area in which ASOP No. 38 may or may not apply.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment. The reviewers note that section 1.2 does not limit the reason why a catastrophe model is used to perform actuarial services or whether the catastrophe model is a mature or novel catastrophe model.
Comment	One commentator suggested that section 1.2 should state that the guidance in the standard applies to the extent practicable within the scope of the actuary’s assignment when the actuary is reviewing or evaluating a catastrophe model.
Response	The reviewers agree and made the change.
Comment	One commentator suggested that “review or evaluation” be removed from the scope of the standard or alternatively that the scope be changed to exclude an actuary performing a regulatory review.
Response	The reviewers believe the revised guidance is appropriate and made no change in response to this comment.

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Comment	One commentator recommended that section 1.2 should state that the application of the standard be based on the actuary's professional judgement as to the materiality of the model output for the intended user.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment. The reviewers note that section 3.1 addresses materiality.
Comment	One commentator recommended that section 1.2 should state that the guidance in the standard applies only to the extent of the actuary's responsibilities and adopt the language from ASOP No. 56 section 1.2.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator suggested that the scope of the standard be expanded to include elements similar to ASOP No. 56.
Response	The reviewers believe the revised guidance is appropriate and made no change in response to this comment.
Comment	Several commentators questioned what constituted a conflict between ASOP No. 38 and ASOP No. 56 versus what constituted a difference and asked how potential conflicts are meant to be resolved.
Response	The reviewers believe the revised guidance is appropriate and made no change in response to this comment. The reviewers note that ASOP No. 1, <i>Introductory Standard of Practice</i> , section 4.4, states, "When an actuary believes that multiple ASOPs have conflicting provisions when applied to a specific situation and none provide explicit guidance concerning which governs, the actuary should apply professional judgment and may wish to contact the ABCD for confidential guidance on appropriate practice."

SECTION 2. DEFINITIONS

Section 2.2, Catastrophe Model

Comment	Two commentators suggested clarifying the definition of catastrophe model.
Response	The reviewers agree and made changes similar to those suggested by the commentators to improve clarity.
Comment	One commentator suggested a definition for "model" be added to ASOP No. 38.
Response	The reviewers agree and made the change.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 3.1, Introduction

Comment	One commentator suggested that the use of the term "validation" used in sections 3.1(d) and 3.5 be clarified to distinguish if the terms are being used differently.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment. The reviewers note section 3.1 introduces validation and section 3.5 provides details on the validation of catastrophe model output.

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Section 3.2, Appropriate Reliance on Experts (now titled Catastrophe Models Developed by Experts)	
Comment	One commentator recommended changing “should consider” to “may consider” regarding the appropriate level of reliance on experts to be consistent with the corresponding language in ASOP No. 56, section 3.5.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator recommended changing the language in section 3.2(b) to mirror ASOP No. 56, section 3.5(b).
Response	The reviewers agree and made the change.
Comment	One commentator noted that this section, does not include the language of ASOP No. 56, section 3.5(d), which considers whether the science underlying the expertise is likely to produce useful models for the intended purpose.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Comment	One commentator recommended that ASOP No. 38 be expanded to require disclosure of reliance on experts.
Response	The reviewers agree and made the change.
Comment	One commentator suggested that the ASOP be expanded to explicitly allow reliance on an expert to select, use, review, or evaluate the catastrophe model.
Response	The reviewers believe the guidance is appropriate and consistent with the suggestion, and made no change in response to this comment.
Section 3.5, Appropriate Validation (now titled Output Validation)	
Comment	One commentator requested that results derived from alternate models or methods, where available and appropriate, which is part of current ASOP No. 38, be added.
Response	The reviewers partially agree and modified the language.
Section 3.7, Reliance on Another Actuary	
Comment	One commentator suggested that ASOP No. 56 be added to the requirements for reliance on another actuary.
Response	The reviewers believe the revised guidance is appropriate and made no change in response to this comment.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 39**

**Treatment of Catastrophe Losses in
Property/Casualty Insurance Ratemaking**

**Developed by the
Subcommittee on Ratemaking of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2000
Updated for Deviation Language Effective May 1, 2011**

(Doc. No. 156)

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ASOP No. 39—June 2000

June 2000

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 39

This booklet contains the final version of Actuarial Standard of Practice No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*.

Background

Many property/casualty insurance products are, by their nature, subject to large aggregate losses resulting from relatively infrequent events or natural phenomena, i.e., from catastrophes. These losses can cause extreme volatility in historical insurance data and generally require separate and different treatment from other losses in ratemaking methodologies. Historically, the most common method was to calculate the ratio of actual catastrophe losses to noncatastrophe losses over a longer experience period, and apply that ratio to expected noncatastrophe losses in the ratemaking formula.

In 1992 and 1994, two events occurred that changed the actuarial profession's view of catastrophe losses. The Hurricane Andrew and Northridge Earthquake catastrophes clearly demonstrated the limitations of relying exclusively on historical insurance data in estimating the financial impact of potential future events. In addition, property/casualty insurers (including self-insurers) and their actuaries began to focus on the impact that large individual events or sequences of events could have on the insurers' solvency, cash flow, and earnings.

This actuarial standard of practice is intended to provide guidance to actuaries in evaluating catastrophe exposure and in determining a provision for catastrophe losses and loss adjustment expenses in property/casualty insurance ratemaking.

Exposure Draft

This standard was exposed for review in February 1999, with a comment deadline of June 15, 1999. Fourteen comment letters were received. The Subcommittee on Ratemaking reviewed all the comments carefully, and many of the suggestions were incorporated in the final standard. In particular, the subcommittee did the following: (1) revised the title and the scope of the standard to more explicitly recognize that the standard applied to ratemaking; (2) revised the text to

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indicate that the actuary was estimating a catastrophe provision not estimating actual catastrophe losses; and (3) more explicitly recognized that, in the end, the procedure that the actuary uses must reflect the expected frequency and severity distribution of catastrophes, as well as the anticipated class, coverage, geographic and other relevant exposure distributions. For a summary of the substantive issues contained in these fourteen comment letters and the task force's responses, please see appendix 2.

The subcommittee and Casualty Committee thank all those who commented on the exposure draft.

The subcommittee also thanks former member Robert W. Gossrow for his contributions during the development of this proposed ASOP.

The ASB voted in June 2000 to adopt this standard.

Subcommittee on Ratemaking of the Casualty Committee

Patrick B. Woods, Chairperson

Mark S. Allaben	R. Michael Lamb
Charles H. Boucek	Marc B. Pearl
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ACTUARIAL STANDARD OF PRACTICE NO. 39

**TREATMENT OF CATASTROPHE LOSSES IN
PROPERTY/CASUALTY INSURANCE RATEMAKING**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* of the Casualty Actuarial Society states that consideration should be given to the impact of catastrophes and that procedures should be developed to include an allowance for catastrophe exposure in the rate. The purpose of this actuarial standard of practice (ASOP) is to provide guidance to actuaries in evaluating catastrophe exposure and in determining a provision for catastrophe losses and loss adjustment expenses in property/casualty insurance ratemaking.
- 1.2 **Scope**—This standard provides guidance to actuaries when performing professional services in connection with ratemaking for property/casualty insurance coverages including property/casualty risk financing systems, such as self-insurance or securitization products, which provide similar coverage.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced document as it may be amended or restated in the future, and any successor to it, by whatever name called. If the amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for work performed on or after December 15, 2000.

Section 2. Definitions

The definitions below are defined for use in this actuarial standard of practice.

- 2.1 **Catastrophe**—A relatively infrequent event or phenomenon that produces unusually large aggregate losses.
- 2.2 **Catastrophe Ratemaking Procedures**—Ratemaking procedures that adjust for the impact of catastrophe losses in the experience data and determine a provision for catastrophe losses and loss adjustment expenses.
- 2.3 **Contagion**—A lack of independence between the occurrence of losses among different entities.
- 2.4 **Demand Surge**—A sudden and usually temporary increase in the cost of materials, services, and labor due to the increased demand for them following a catastrophe.

Section 3. Analysis of Issues and Recommended Practices

In evaluating catastrophe exposure and in determining a provision for catastrophe losses and loss adjustment expenses in property/casualty insurance ratemaking, the actuary should be guided by the following sections.

- 3.1 **Identification of Catastrophe Perils or Events**—The actuary should take reasonable steps to identify the perils or events that have the potential to generate catastrophe losses that differ materially from the expected aggregate losses or the expected distribution of losses. These perils or events have at least one of the following characteristics:
 - a. The Potential to Display Contagion—Examples of perils that display contagion include windstorms, earth movement, and freezing.
 - b. Infrequent Occurrence—Some events that occur infrequently have the potential to produce losses that can significantly distort the historical experience. An example of such an event is an explosion that results in the release of toxic material. If the experience data contain such events, using this experience data without adjustment may overstate the catastrophe provision in the rates. If the experience data do not contain such events, using this experience data without adjustment may understate the catastrophe provision in the rates.
- 3.2 **Identification of Catastrophe Losses**—The actuary should identify, where practicable, the catastrophe losses in the historical insurance data. In doing so, the actuary should consider how accurately the catastrophe losses can be identified, and the extent to which they may have a material impact on the results of the analysis.

3.3 The Use of Data in Determining a Provision for Catastrophe Losses—The actuary may use historical insurance data and noninsurance data, as described in sections 3.3.1 and 3.3.2 below.

3.3.1 Use of Historical Insurance Data—The actuary should consider the following when using data available from insurance sources:

- a. Evaluating Historical Insurance Data—The actuary should consider comparing historical insurance data to noninsurance data to determine the extent to which the available historical insurance data are fully representative of the long-term frequency and severity of the perils or events identified in section 3.1 that produced the catastrophe losses. Thus, in determining a provision for catastrophe losses, the actuary should consider the sensitivity of the provision to changes in the historical insurance data relating to the following: (1) the frequency of catastrophes; (2) the severity of catastrophes; and (3) the geographic location of catastrophes.
- b. The Applicability of Historical Insurance Data—The actuary should consider the applicability of historical insurance data for the insured coverage. This includes determining (1) whether catastrophe losses are likely to differ significantly among elements of the rate structure, such as construction type and location; (2) whether such differences should be reflected in the ratemaking procedures; and (3) how to reflect such differences, taking into account both homogeneity and the volume of data. In addition, the actuary should consider whether there is a sufficient number of years of comparable, compatible historical insurance data.
- c. Adjustments to Historical Insurance Data to Reflect Future Conditions—The actuary should consider making adjustments to the historical insurance data to reflect conditions likely to prevail during the period in which the rate will be in effect. Such adjustments should take into account the impact of changes in the exposure to loss, including coverage differences, the underlying portfolio of insured risks, building codes and the enforcement of these codes, and building practices; population shifts; costs; and demand surge during both the historical period and the period for which the rate will be in effect. These considerations become more important when a longer experience period is used because they can have a greater effect over longer time periods.
- d. Stability of Outcomes Based on Historical Insurance Data—The actuary should consider the extent to which the provision for catastrophe losses would change if the catastrophe ratemaking procedure were to be carried out using different historical experience periods. If, in the actuary's judgment, the procedure is too sensitive to the inclusion or exclusion of an

individual catastrophe or sets of years, the actuary should consider modifying the procedure to reduce the sensitivity.

- e. Differing Trends in Loss Data—Historical insurance data used to determine a provision for catastrophe losses will often extend over much longer time periods than data used in most other ratemaking procedures; thus, the effect of small differences in annual trend rates will be magnified. The actuary should consider the potential for catastrophe losses to trend at a rate materially different than the noncatastrophe losses and reflect such differences in the ratemaking process as appropriate.
- f. Consistent Definition of a Catastrophe—In utilizing a catastrophe ratemaking procedure, the actuary often uses two sets of historical insurance data. The first set may be comprised of data from the ratemaking experience period from which the catastrophe losses have been removed. The second set may contain longer term experience for catastrophe losses. Collecting a greater volume of data for this second data set may be accomplished in various ways, such as by using a greater number of relevant years or by using relevant data for a broader segment of business.

The actuary should consider the catastrophe definition pertaining to, and the catastrophe potential in, both of these data sets to ensure that the definitions are not materially inconsistent. Specific areas to consider are consistency of the thresholds used to determine catastrophe losses and consistency in identifying specific catastrophes.

3.3.2 Use of Noninsurance Data and Models—If, after considering the items contained in section 3.3.1(a–f), the actuary believes that the available historical insurance data do not sufficiently represent the exposure to catastrophe losses, the actuary should consider doing one of the following:

1. use noninsurance data to adjust the historical insurance data;
2. use noninsurance data (including models based thereon) as input to ratemaking procedures; or
3. use models based on a combination of historical insurance data and noninsurance data.

The actuary should be satisfied that the resulting ratemaking procedures appropriately reflect the expected frequency and severity distribution of catastrophes, as well as anticipated class, coverage, geographic, and other relevant exposure distributions.

- 3.4 **Using a Provision for Catastrophe Losses**—In ratemaking, actuaries generally use historical data or modeled losses to form the basis for determining future cost estimates. The presence or absence of catastrophes in any historical data used to form future cost estimates can create biases that diminish the appropriateness of using that data as the basis for future cost estimates. The actuary should address such biases by adjusting the historical data used to form future cost estimates and determining a provision for catastrophe losses (after consideration of the issues and practices found in sections 3.1–3.3).

The actuary may employ other considerations and methods to adjust for catastrophes associated with casualty coverages. For example, such adjustments may include limiting losses in the underlying data and using increased limits factors or excess loss factors based on industry data or other sources, or adjusting for legislative changes, legal decisions, changes in the distribution of policy limits, and coverage provisions. In addition, other adjustments, such as supplementing state-specific data with countrywide data or company-specific data with industry information, may be appropriate.

- 3.5 **Loss Adjustment Expenses**—The actuary should be aware that the relationship of loss adjustment expense to incurred loss can be significantly different for catastrophe losses and for noncatastrophe losses. In some cases, the historical relationships of overall loss adjustment expense to overall incurred losses may produce inappropriate loss adjustment expense estimates for catastrophe losses. Similarly, the historical relationship of overall loss adjustment expense to overall incurred losses may produce inappropriate loss adjustment expense estimates for noncatastrophe losses if the historical period was impacted by catastrophe losses. The actuary should modify the loss adjustment expense procedure where necessary to develop a reasonable estimate of prospective loss adjustment expense for both catastrophe and non-catastrophe losses.

Section 4. Communications and Disclosures

- 4.1 **Conflict with Law or Regulation**—If a law or regulation conflicts with the provisions of this standard, the actuary should develop a rate in accordance with the law or regulation, and disclose any material difference between the rate so developed and the actuarially-determined rate to the client or employer.
- 4.2 **Documentation and Disclosure**—The actuary should be guided by the provisions of ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*. If the actuarial work product includes mathematical modeling developed by someone other than the actuary, the documentation should include the source of the model and how the model was used in the analysis. In addition, if the model is outside the actuary’s area of expertise, the actuary should be guided by the documentation and disclosure requirements of ASOP No. 38, *Using Models Outside the Actuary’s Area of Expertise*.

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4.3 **Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:

- a. in addition to the disclosure covered in section 4.1, the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Historical Procedures—Prior to Hurricanes Hugo and Andrew, the predominant ratemaking procedures used to determine a catastrophe provision involved calculating the long-term ratio of such losses to noncatastrophe losses over a twenty- to thirty-year span. Catastrophes were identified either by some industry-dollar or loss-ratio threshold, and typically represented weather-related perils such as hurricanes, tornadoes, or snow storms. Other physical catastrophes such as floods and earthquakes were usually covered by separate policies designed to specifically include such perils. A provision for casualty-related catastrophes was typically not included separately in the rates, but was implicitly included with the contingency provision.

Issues—In the late 1980s and early 1990s, catastrophes produced record levels of damage, and it became evident that adjustments to historical ratemaking procedures were necessary. Hurricanes Hugo, Andrew, and Iniki produced aggregate losses exceeding previously expected possibilities. These huge losses brought to light other issues such as population shifts, non-adherence to building codes, and exposure concentration, none of which had been addressed previously. In addition, the occurrence of earthquakes in both San Francisco and Northridge, and a major flood in the Midwest during this period heightened the need for development of improved ratemaking procedures for these perils. Finally, catastrophes that had not been contemplated previously, such as the World Trade Center bombing and the Oakland Hills fires, raised other questions concerning how to provide for such losses in the rate.

In addressing these issues, catastrophe models, which previously were used by companies to determine their probable maximum loss under various scenarios, were adjusted for use in ratemaking. However, since these models were often multidisciplinary in nature or proprietary, it was often difficult to (1) ascertain the underlying assumptions of the model, and (2) obtain regulatory approval of rates based on these models.

Other issues have also emerged, making assessment of catastrophe exposure even more difficult. Examples of such issues include coverage changes, such as the greater use of guaranteed replacement cost on homeowner policies or the use of separate wind deductibles; the emergence of state-run catastrophe funds; and the availability of catastrophe options.

Current Practices

Subsequent to Hurricanes Hugo and Andrew, numerous enhancements and alternatives have been developed that improve on the traditional, long-term catastrophe ratemaking procedure.

One procedure uses the traditional excess wind approach but supplements or replaces the historical insurance data with hypothetical losses from an infrequent event (for example, a fifty-year event) as calculated by a catastrophe simulation model. Historical events of greater severity than the modeled fifty-year event are eliminated. Separate excess factors are calculated from the historical insurance data and for a hypothetical year constructed to include the modeled fifty-year event. The excess factor is calculated as a weighted average of those two separate factors.

A second procedure involves loading catastrophe reinsurance costs into the rate calculation. With this procedure, the rates are initially calculated using losses net of the catastrophe reinsurance. The company's overall catastrophe reinsurance costs are allocated to state and line, and those allocated costs are added to the calculated rate net of reinsurance.

A third procedure separates catastrophes into hurricane and nonhurricane components and treats each separately. This enables the actuary to focus on the particular difficulties, low frequency and high severity, in estimating hurricane losses. One specific procedure that is used for nonhurricane catastrophes is to relate catastrophe losses to amount of insurance years. A long-term ratio of catastrophe losses to amount of insurance years is calculated and used to load the ratemaking experience period for expected catastrophe losses. This procedure has also been used for hurricanes, using noninsurance data such as long-term hurricane frequencies to adjust the historical insurance data.

A fourth procedure that has been used for nonhurricane catastrophes is based on frequency. With this procedure, daily frequencies are calculated over a long period and each day is ranked using that frequency. A set percentage of days with the highest frequencies is considered excess. The losses incurred on those excess days are compared to the losses incurred on all other days in order to calculate an excess factor.

In considering earthquakes and hurricanes, the predominant approach currently used to calculate expected catastrophe losses is computer simulation models. These models make extensive use of noninsurance data to estimate the overall frequency of these events, as well as the frequency of the key defining characteristics of these events. Based on these estimated frequencies, a large number of catastrophes are simulated across a broad geographic area. For each simulated catastrophe, the model translates the event or phenomenon into a specific "hazard" parameter, such as wind speed or ground shaking, at all locations impacted by the event. Based on engineering analysis and prior catastrophe losses, the hazard parameter is translated into a damage ratio, i.e., ratio of losses to amount of insurance. These damage ratios are applied to the current or projected amounts of insurance and, when adjusted by the estimated frequencies of the specific catastrophes, produce the expected catastrophe losses.

Since our knowledge of catastrophes is not complete and is still evolving, computer simulation models are also evolving. The expected catastrophe losses calculated from these models can be

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subject to significant variation, since different models (i.e., both models from different developers and different versions of models from the same developer) will obviously provide different answers.

All of these procedures may or may not be supplemented with a risk load calculated in accordance with ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*.

Appendix 2

Comments on the 1999 Exposure Draft and Subcommittee Responses

The exposure draft of this actuarial standard of practice (ASOP)—formerly titled *Treatment of Catastrophe Losses in Property/Casualty Insurance*—was issued in February 1999, with a comment deadline of June 15, 1999. Fourteen comment letters were received. The Subcommittee on Ratemaking carefully considered all comments received. Summarized below are the significant issues and questions contained in the comment letters, printed in roman type. The subcommittee's responses are printed in **boldface**.

General Comments

One commentator notes that, in the end, the definition of a catastrophe is driven by frequency. High frequency loss processes should produce credible estimates of future losses without adjustment. Low frequency events do not provide these estimates and adjustments are needed. **The subcommittee disagrees and believes that the most important facts are that the event or phenomenon not only should be relatively infrequent but should also produce unusually large aggregate losses.**

Two commentators suggested that the title of the standard should be *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*. **The subcommittee agreed and changed the title.**

Two commentators believed that the standard too often specified what the actuary *should* do, suggesting the use of *may* as more appropriate. **The subcommittee disagrees, since the standard generally is specifying what the actuary needs to consider. The standard does not say the actuary needs to do something after the consideration if the item has no material impact on the results. In performing this work, the actuary needs to consider all items that may materially impact or bias the results.**

One commentator noted that the standard permits the actuary to rely on the work of nonactuaries without proper review and disclosure, particularly as it pertains to models developed by others. **The subcommittee disagrees that an actuary can rely on the work of a nonactuary without review and disclosure. The subcommittee prepared this standard fully aware of ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*, which was being exposed concurrently.**

One commentator suggested that the definitions and explanations should be phrased more in statistical terms whenever possible. **The subcommittee believes that, given the wide variation in available methodologies, a statistically-based definition would too narrowly restrict current acceptable practices.**

Another commentator suggested that the term *procedures* should be replaced by *models*. **The subcommittee believes that *procedures* is appropriate, particularly since *models*, in this case, could be too narrowly read to mean computer models.**

One commentator stated that the standard does nothing to help an actuary who uses a computer model to develop estimated catastrophe losses and is challenged by individuals who refuse to accept the validity of these models. **The subcommittee disagrees. The standard provides the analytical steps that the actuary should follow in examining the available data. Based on the analysis, the actuary can determine and demonstrate to others whether the data need to be supplemented by additional data or, alternatively, whether models that consider various sources of data should be used.**

Transmittal Memorandum

The transmittal memorandum of the exposure draft asked readers to address several key questions. One question asked, “Is the application of the standard to casualty (i.e., nonproperty) insurance appropriate, and has the subject been addressed adequately?” One commentator stated that catastrophes should be limited to first party coverages, particularly since the considerations listed in 3.3.1 and 3.3.2 were property related in nature. The commentator also noted that the methodologies referenced were predominantly for property coverages. The commentator did suggest, that if the standard were to apply to casualty coverages, it would need to include considerations such as limiting losses to basic limits; using excess loss factors; adjusting for changes in limits, coverages, or reinsurance; and supplementing state data with countrywide data. **The subcommittee intends that the requirements of this ASOP should also apply to casualty catastrophe losses when such a catastrophe is identified. The subcommittee has included the suggested language for casualty catastrophes in section 3.4.**

The subcommittee also drew its readers’ attention to several provisions in particular: section 2.1, Catastrophe; section 3.1, Identification of Catastrophe Perils or Events; section 3.3.2, Use of Noninsurance Data; and section 4.1, Conflict with Law or Regulation. Please see those sections below for discussion of any pertinent readers’ comments and subcommittee responses.

Section 1. Purpose, Scope, and Effective Date

Section 1.1, Purpose—One commentator stated that no guidance has been given regarding a unique or separate loss adjustment expense for catastrophe. The commentator suggested that the standard delete reference to loss adjustment expenses or provide explicit guidance on this aspect. **The subcommittee agreed and added section 3.5, Loss Adjustment Expenses, to address the issues surrounding loss adjustment expenses.**

Section 1.2, Scope—One commentator noted that the purpose section specifically makes reference to insurance ratemaking, but the scope section says that the standard applies to many more professional services. The commentator asked, “Does this standard apply to those entities cited in the scope section, only when they are related to property/casualty ratemaking?” **The**

standard has been retitled to specify that it applies to property/casualty insurance ratemaking. The services referred to for risk financing systems, such as self-insurance and securitization products, are considered to be ratemaking when estimates for future costs are being determined.

Section 2. Definitions

Section 2.1, Catastrophe—One commentator believed that the definition of catastrophe should relate to how the event or phenomenon violated the general insurance ratemaking model assumption of independent events. **The subcommittee believes that the use of a qualitative definition is more broadly applicable and useful in terms of current accepted practices.**

Another commentator believed that the phrase “or natural phenomenon” should be removed, as the phrase “relatively infrequent events” included natural and manmade phenomena. **The subcommittee agreed and deleted the word “natural” from the definition.**

Another commentator believed that “relatively” should modify high amounts, instead of infrequent events. **The subcommittee believes that it is more important to emphasize the frequency aspects of the definition as opposed to the amount of loss dollars.**

Another commentator stated that serious damage to a very large risk would be considered a catastrophe according to the definition. In the commentator’s view, this did not seem appropriate since a large number of claims might not have resulted. **The subcommittee does not believe that the event needs to produce a large number of claims in order for it to be defined as a catastrophe.**

One commentator believed that the definition need not include the adjective “insured” to modify losses. **The subcommittee agrees and removed it.**

Another commentator suggested the definition eliminate the phrase, “the potential to” produce, as an event either is or is not a catastrophe. **The subcommittee agreed and eliminated the phrase “the potential to” in the definition.**

Section 2.2, Catastrophe Ratemaking Procedures—One commentator believed that the use of the term “adjust” was defensive in nature and that the definition should be something like “to provide a better expected value estimate than could be developed with the limited actual history.” **The subcommittee believes that the original definition is more descriptive of the actual practices in use, while still being consistent with the more theoretical expression of the commentator.**

Another commentator expressed the concern that the current use of the word “adjust” would limit the ability of the actuary to consider any method that includes supplementing or credibility-weighting the losses. **The subcommittee believes that the current wording does not limit the ability of the actuary to use any techniques that, in the opinion of the actuary, produce appropriate estimates of catastrophes losses.**

Two commentators suggested editorial changes in the definition to clarify the timing of the catastrophe losses. **The subcommittee agreed with the suggestions and revised the definition.**

Section 2.3, Contagion—One commentator expressed the concern that some casualty catastrophes may result in claims against a single entity. **The subcommittee is aware of this issue and believes that the standard addresses the issue by providing guidance in section 3.4.**

Section 2.4, Demand Surge—Several commentators suggested editorial changes to sharpen the definition. **The subcommittee changed the definition to reflect the fact that demand surge is a sudden and temporary increase, not only in material and labor but also in services.**

Section 3. Analysis of Issues and Recommended Practices

Section 3.1, Identification of Catastrophe Perils or Events—Several commentators expressed concern about the original language, which seemed to require the actuary to identify all perils or events that might have the potential to generate insured catastrophe losses. **The subcommittee agreed and revised the language to include the idea that the actuary should take reasonable steps to identify the perils or events that would generate material losses.** Another commentator believed that it was appropriate to add a condition of suddenness, either in the discovery or occurrence of loss to the list of characteristics. **The subcommittee did not think that any additional characteristics were needed.**

Some commentators suggested clarifications to section 3.1(b). One commentator suggested replacing the last two sentences with the phrase “the presence or absence of such events in the experience period may result in materially different perceptions of future loss estimates.” **While the subcommittee agrees that the original two sentences were awkward, the revision retains the parallel treatment because the subcommittee believes that a more explicit explanation of the impacts is appropriate.** Another commentator suggested that *infrequent occurrence* should be defined in terms like the frequency of the event over a longer time period than the experience period. **The subcommittee concluded that it was important for the actuary to be able to evaluate the materiality of the loss and frequency of events relative to the long term in the context of the methodology being used.**

Section 3.2, Identification of Catastrophe Losses—Two commentators suggested that the language should be clarified to indicate that the actuary may not be able to identify the catastrophe losses in all the historical data used. **The subcommittee agreed and modified this section to reflect such a possible limitation.** Another commentator believed that the standard provided no guidance to the actuary as to how to identify catastrophe losses in the historical insurance data. **The subcommittee believes that the perils insured and the events covered provide sufficient guidance for the identification of catastrophe losses.**

Section 3.3, The Use of Data in Determining a Provision for Catastrophe Losses—The subcommittee made an editorial revision to the order of the items (a), (b), (c) and (d). Item (d)

was placed first and relabeled as (a) to emphasize the importance of the frequency component of historical data in making use of the historical data in determining a provision for catastrophe losses. One commentator noted that computer simulations are not data. **The subcommittee agreed and revised this section.** Another commentator believed that sections 3.3.1(b) and 3.3.1(a), and 3.3.1(c) and 3.3.1(e), could be combined. **The subcommittee notes that 3.3.1(b) refers to a comparison over time within the set of insurance data, whereas 3.3.1(a) addresses a comparison of the insurance data to external sources. With regard to 3.3.1(c) and 3.3.1(e), the subcommittee believes that 3.3.1(c) refers to the distribution of the exposure to loss in the experience period, compared to the prospective period, whereas 3.3.1(e) refers to possible differing trends in the costs by peril over the available period.**

Two commentators noted that the language in section 3.3.1(a) created an obligation that may not be possible to satisfy in all cases. **The subcommittee agreed and revised this section to say that the actuary should consider comparing historical insurance data to noninsurance data.** Another commentator noted that this section implies that one uses historical data only if the data give comparable results to modeling, since use of modeling will give the full spectrum of loss distribution. **The subcommittee notes that this section is alerting the actuary to be sure that he or she believes that the data underlying his or her procedure sufficiently reflect the long-term frequency and severity of events producing insured catastrophe losses. If the actuary does not believe that the data are sufficient, section 3.3.2 states that the actuary should consider using a modeling procedure.**

In section 3.3.1(b), one commentator suggested changing the language to say “whether catastrophe losses are likely to differ significantly among elements.” **The subcommittee agreed and made the change.**

In section 3.3.1(c), one commentator suggested the use of a bullet-point list to highlight the importance of each element, particularly items related to coverage, such as limits, co-insurance, deductibles, etc. **The subcommittee agrees that it is important to highlight aspects of coverage and has explicitly mentioned changes in coverage as a consideration.**

In section 3.3.1(d), one commentator believed that if the indicated rate change is sensitive to the number of years in the historical experience period, then one should not use the historical period at all. The commentator believed that this section implies one would modify the current procedure, not switch to using computer simulation. **The subcommittee disagrees. In fact, the subcommittee views modifying procedures to include adopting computer simulation models.**

In section 3.3.1(e), one commentator noted that the section should be revised to say “when noncatastrophe losses are expected to change at a rate materially different from that for catastrophe losses.” **The subcommittee agreed with this and revised the text to cover the potential aspects as referring to past and future time periods.**

Another commentator stated that the phrase “most catastrophe ratemaking procedures” should be revised to “traditional catastrophe ratemaking procedures,” since generally the standard is

referring to procedures that have existed in the past. **The subcommittee revised this section to remove the reference to any specific type of procedure.**

One commentator suggested several editorial changes for section 3.3.1(f) that generalized the section as well as broadened the suggested conditions for increasing the amount of data in the second set. **The subcommittee agreed with this comment and revised the text.**

Two commentators suggested that the term “consistent” be replaced by “not materially inconsistent.” **The subcommittee agreed with this suggestion and made the revision.** Another commentator suggested that the last sentence should be revised to remove the word “dollar” and changing the “or” to “and.” **The subcommittee agreed and revised the text.**

Section 3.3.2, Use of Noninsurance Data—One commentator suggested that the standard is giving the false impression that one should adjust past insurance data for all catastrophe perils. This commentator suggests that the adjustments are impossible to do adequately, giving false hope that meaningful results can be obtained. The commentator suggested that the standard be restructured to separate the treatment of catastrophes, such as hurricanes and earthquakes, from all others. **The subcommittee disagrees with these comments. The standard provides the actuary with a framework for evaluating the usability of the available data and developing appropriate catastrophe treatments. The standard identifies the issues for the actuary and gives sufficient freedom for the actuary to demonstrate the appropriateness of the resolution of the issues.**

The exposure draft contained sections 3.3.2(a) and (b). The revisions made as a result of comments received combined parts (a) and (b). All responses to comments received in this section refer to the original section references.

In section 3.3.2(a), one commentator suggested the addition of the phrase “and other relevant.” **The subcommittee agreed with this suggestion.** The same commentator suggested that the section be modified to say “expected” frequency and catastrophes “for the current or prospective periods.” **The subcommittee disagreed as the expected frequency and severity of catastrophes was felt to be sufficiently descriptive.**

In section 3.3.2(b), two commentators believed the section implied that the actuary was capable of making decisions on when the historical insurance data best capture the range of frequency and severity of catastrophes. **The subcommittee recognizes that an actuary may not know these facts without consultation with outside experts. The subcommittee believes that the actuary could become aware of the issues by referring to such experts, and make intelligent decisions about the representativeness of the data.**

One commentator suggested that in section 3.3.2(b) the phrase “if the results of the simulation” was inappropriate. The commentator’s point was that the process—not the results—was most important here. **The subcommittee agreed and has deleted any reference to results of the simulation and has focused the actuary on addressing the appropriateness of the procedures used.**

Section 3.4, Using a Provision for Estimated Catastrophe Losses—One commentator believed that the section demanded that the actuary *always* replace the actual data with estimated data, and suggested that the phrase “should adjust” be changed to “may consider adjusting.” **The subcommittee disagrees and believes that if the actuary has biased data, the actuary needs to estimate what the values should be excluding the bias.**

Section 4. Communications and Disclosures

Section 4.1, Conflict with Law or Regulation—Several commentators felt that the requirement that the actuary disclose material differences between the rate developed in accordance with law or regulation and the actuarially-determined rate was unnecessarily burdensome. One commentator suggested that this disclosure burden was unique among all ASOPs. **The subcommittee believes that the potential range of differences could be so large that disclosing the difference to the client or employer would be necessary. The subcommittee also notes that this same requirement exists in ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*.**



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 40**

Compliance with the NAIC Valuation of Life Insurance Policies Model Regulation with Respect to Deficiency Reserve Mortality

**Developed by the
Task Force on XXX Regulation of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2000**
Updated for Deviation Language Effective May 1, 2011

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T A B L E O F C O N T E N T S

Transmittal Memorandum

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December 2000

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Valuation of Life Insurance Policies

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 40

This booklet contains the final version of ASOP No. 40, *Compliance with the NAIC Valuation of Life Insurance Policies Model Regulation with Respect to Deficiency Reserve Mortality.*

Background

In March 1999, the National Association of Insurance Commissioners (NAIC) adopted a revised version of the Valuation of Life Insurance Policies Model Regulation (hereinafter the *Model*), often referred to as “Regulation XXX.” The *Model* specifies an effective date of January 1, 2000, and does not apply to policies issued prior to the effective date. Certain types of plans are not subject to the *Model*.

The *Model* specifies that the 1980 Commissioners’ Standard Ordinary mortality tables (hereinafter the 1980 CSO valuation tables) are to be used as the minimum mortality standard for basic reserves. The *Model* also includes several tables of select factors that may be applied to the 1980 CSO valuation tables during the first segment, as defined in the *Model*, for both basic reserves and deficiency reserves. In addition, the *Model* allows the appointed actuary to apply certain percentages (hereinafter X factors) to these select factors to modify the mortality basis for deficiency reserves for the first segment. The choice of the X factors is subject to certain limiting parameters and tests that are specified in the *Model*.

The *Model* specifies that if any X factor for any policy in a company is less than 100%, then the standard actuarial opinion and memorandum for the company must be based on asset adequacy analysis, and, in addition, the appointed actuary must annually opine, for all policies subject to the *Model*, as to whether the mortality rates resulting from application of the X factors meet the requirements of the *Model*. The *Model* provides that this additional opinion shall be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

Critical Issues

A key issue for the appointed actuary is ensuring that the X factors comply with the limiting parameters and tests specified in the regulation, based on anticipated mortality during the first

segment. This task is complicated by the number of different underwriting classes and plans for which X factors may be determined. There is an additional danger that current X factors would need to be increased at some future date, with the possibility of resultant large reserve increases and shocks to surplus.

Sources of experience mortality data used as the basis for anticipated mortality are very important, especially for smaller companies and for newer products or mortality classes with no significant mortality experience upon which to draw. The appointed actuary will need to consider how to treat data from different sources. Section 3.5.2 includes guidance as to the hierarchy of preference for experience on which to base anticipated mortality. Data from reinsurers are included as an acceptable source of data, among others, if the data are relevant and needed to develop a credible basis for anticipated mortality.

The goal of demonstrating confidence in the anticipated mortality underlying the X factors is very important. There are no specific rules to follow in the preparation of this demonstration. However, approval of X factors by some state regulators will likely depend on their satisfaction with these demonstrations and the implied amount of professionalism used in making the X factor determinations. The form and content of the supporting actuarial report can be significant to the regulator in considering approval of the X factors.

The use of mortality experience net of reinsurance was considered. The task force reached the conclusion that a company's own mortality experience on direct plus assumed business should be used before any reduction of exposure or claims on reinsurance ceded. This conclusion is stated in section 3.4.

Exposure Drafts

The first exposure draft of this standard was issued in September 1999 with a comment deadline of March 31, 2000. The Task Force on XXX Regulation carefully considered the fifteen comment letters received. A summary of the substantive issues contained in these comment letters and the task force's responses are in appendix 2 of the second exposure draft of this standard.

The second exposure draft was issued in June 2000 with a comment deadline of October 15, 2000. Four comment letters were received. The Task Force on XXX Regulation carefully considered these comment letters and made the following changes to the final ASOP:

1. In section 3.4, Creation of X Factor Classes, the task force split the paragraph dealing with reinsurance into two paragraphs to clarify the guidance with respect to reinsurance assumed and reinsurance ceded. On reinsurance assumed, the task force clarified that separate X factor classes should be considered if anticipated mortality on assumed business is materially different from that on direct business.

2. In section 3.5.2, Deriving Anticipated Mortality, the task force clarified that reinsurance should be considered in deriving anticipated mortality and that the anticipated mortality on reinsured business should exclude the effect of experience refunds or other adjustments contained in the reinsurance agreements.
3. In appendix 1, under the section on assessment of anticipated mortality, the cautionary language associated with the discussion on hypothesis testing was rewritten and moved to the end of the section as general guidance to the appointed actuary in applying any approach.

For a summary of the substantive issues contained in these comment letters, please see appendix 2. The task force and Life Committee thank all those who commented on the first and second exposure drafts.

The ASB voted in December 2000 to adopt this standard.

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ACTUARIAL STANDARD OF PRACTICE NO. 40

COMPLIANCE WITH THE NAIC VALUATION OF LIFE INSURANCE POLICIES MODEL REGULATION WITH RESPECT TO DEFICIENCY RESERVE MORTALITY

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to appointed actuaries with respect to annual opinions and supporting actuarial reports as to whether certain mortality rates for minimum reserves used to determine deficiency reserves meet the requirements of the National Association of Insurance Commissioners (NAIC) *Valuation of Life Insurance Policies Model Regulation*, as amended by the NAIC in March 1999 (hereinafter the *Model*). On plans of life insurance elected by the company, the *Model* allows the appointed actuary to adjust certain mortality rates to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, for use in calculating deficiency reserves. This standard provides guidance to the appointed actuary in selecting the adjustments to these mortality rates and in assessing whether the rates meet the requirements of the *Model*.
- 1.2 **Scope**—This standard applies to appointed actuaries complying with the regulatory requirements governing the mortality rates used for purposes of calculating deficiency reserves on certain plans of insurance prepared in accordance with the *Model*.

The scope of this standard does not include compliance with state regulations that differ materially from the *Model* with regard to the issues addressed in this standard. Appointed actuaries complying with requirements of a regulation that differs materially from the *Model* should consider the guidance in this standard to the extent that it is appropriate.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the appointed actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for all statements of actuarial opinion provided for reserves with a valuation date on or after May 1, 2001.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Anticipated Mortality**—The appointed actuary’s assumption about the mortality to be experienced in the future on a group of policies.
- 2.2 **Antiselection**—The actions of individuals, acting for themselves or for others, who are motivated directly or indirectly to take financial advantage of the risk classification system.
- 2.3 **Appointed Actuary**—Any individual who is appointed or retained in accordance with the requirements set forth in the model NAIC *Actuarial Opinion and Memorandum Regulation*.
- 2.4 **Basic Reserves**—Reserves calculated in accordance with section 5 of the model NAIC *Standard Valuation Law*.
- 2.5 **Contract Segmentation Method**—The method of dividing the period from issue to mandatory expiration of a policy into successive segments, with the length of each segment being defined as set forth in section 4 of the *Model* and using the assumptions as set forth in section 4 of the *Model*.
- 2.6 **Credibility**—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).
- 2.7 **Deficiency Reserves**—The excess, if greater than zero, of minimum reserves calculated in accordance with section 8 of the model NAIC *Standard Valuation Law* over basic reserves.
- 2.8 **Full Credibility**—The level at which a particular body of data is assigned full predictive value based on a selected confidence interval.
- 2.9 **Model Select Mortality Factors**—The select mortality factors in the appendix of the *Model*.
- 2.10 **Policy**—Any life insurance policy subject to the *Model*.
- 2.11 **Ten-Year Select Factors**—The select factors adopted with the 1980 amendments to the model NAIC *Standard Valuation Law*.

- 2.12 **X Factor Class**—A group of policies under one or more plans of insurance to which a single set of X factors applies. An example of an X factor class could be a male preferred nonsmoker underwriting class, having one set of X factors covering all issue ages and durations for several plans of insurance.
- 2.13 **X Factors**—For durations in the first segment (only), as determined under the contract segmentation method, the percentages that may be applied to the *Model* select mortality factors for the purpose of calculating deficiency reserves. Subject to the requirements set forth in section 5 of the *Model*, the X factors may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience.
- 2.14 **1980 CSO Valuation Tables**—The Commissioners' 1980 Standard Ordinary Mortality Table without ten-year select factors, incorporated in the 1980 amendments to the model NAIC *Standard Valuation Law*, and variations of the 1980 CSO valuation tables approved by the NAIC, such as the smoker and nonsmoker versions approved in December 1983.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Regulatory Requirements**—Section 5 of the *Model* contains the requirements governing the mortality rates to be used for the purpose of calculating deficiency reserves. The appointed actuary should be familiar with the *Model* and any significant state variations, and should be satisfied that applicable actuarial requirements have been met.
- 3.2 **Actuarial Opinion**—The *Model* contains requirements regarding the selection and continued use of X factors to adjust certain mortality rates for purposes of calculating deficiency reserves. If any X factor is less than 100% at any duration for any policy, the appointed actuary should annually prepare an opinion and supporting actuarial report, as required by the *Model* and in accordance with section 4 of this standard.
- 3.3 **X Factor Requirements**—The X factors may be used only for durations in the first segment, as determined by the contract segmentation method. In determining compliance with each requirement, the appointed actuary should take into account only the applicable durations in the first segment. Certain requirements are relatively straightforward; for example, no X factor can be less than 20%. Others call for professional judgment, particularly requirements that involve an assessment of anticipated mortality.

Two requirements contain tests that directly or indirectly compare valuation mortality rates, as adjusted by X factors, to a variant of anticipated mortality. The appointed actuary should demonstrate that the X factors adopted satisfy these tests.

- a. Section 5.B(3)(d) of the *Model* requires that, for the first segment, the actuarial present value of future death benefits calculated using the mortality rates resulting from the application of the X factors be greater than or equal to the actuarial

- present value of future death benefits calculated using anticipated mortality without recognition of mortality improvement beyond the valuation date. The actuarial present values should be calculated using the valuation interest rate used for basic reserves and the appropriate mortality for each situation.
- b. Section 5.B(3)(e) of the *Model* requires that, for the first segment, the mortality rates resulting from the application of the X factors be at least as great as anticipated mortality, without recognition of mortality improvement beyond the valuation date, in each of the first five years after the valuation date.

3.4 **Creation of X Factor Classes**—The appointed actuary should consider the composition and characteristics of the policies issued under a plan of insurance in determining the appropriate X factor classes that will be applicable within that plan. The policies that comprise an X factor class generally should have similar underwriting or experience characteristics. When X factor classes are similar across various plans of insurance, these X factor classes may be combined into a common single X factor class.

The appointed actuary should consider the presence of reinsurance in creating X factor classes. Anticipated mortality should be assessed and X factor classes should be created on a gross basis (i.e., direct business plus reinsurance assumed, before deducting reinsurance ceded). To the extent that anticipated mortality on reinsurance assumed is materially different from that on direct business, the appointed actuary should consider creating separate X factor classes.

With respect to reinsurance ceded, the anticipated mortality on ceded business should not be materially different from the anticipated mortality of the X factor class from which the business is ceded. If the difference is material, the appointed actuary should consider creating separate X factor classes.

When creating X factor classes, the appointed actuary should be satisfied that mortality studies of company experience for each X factor class and for all classes combined are available, to the extent experience exists, or will be available as experience emerges in the future.

3.5 **Selection of X Factors**—The *Model* allows the company to adjust the *Model* select mortality factors by X factors for the purpose of calculating deficiency reserves for specified plans of insurance elected by the company. The appointed actuary should select the X factors for each X factor class, based on anticipated mortality for each class, without recognition of mortality improvement beyond the valuation date. As uncertainty concerning the level of anticipated mortality increases, the appointed actuary should consider providing a margin for conservatism, such as by selecting higher X factors.

Anticipated mortality may, for some X factor classes, exceed the 1980 CSO valuation tables with *Model* select mortality factors applied, resulting in X factors greater than 100%.

In determining anticipated mortality and in selecting X factors, the appointed actuary

should be guided by the following considerations:

- 3.5.1 Relevant Company Experience—The appointed actuary should take into account the level and trend of actual company mortality experience in assessing anticipated mortality for each X factor class. However, in accordance with the *Model*, no recognition should be made of mortality improvement beyond the valuation date.

The appointed actuary should use the most recent relevant company experience that is practicably available. Consideration should be given to the length of the observation period, recognizing the tradeoff between having insufficient data if the period is too short and having data no longer relevant if the period is too long. The results of the mortality studies should be reviewed for reasonableness.

- 3.5.2 Deriving Anticipated Mortality—If relevant company experience for a particular X factor class is available and has full credibility, the appointed actuary should use that experience as the basis for deriving anticipated mortality.

In situations where relevant company experience for a particular X factor class is not available or does not have full credibility, the appointed actuary should derive anticipated mortality in a reasonable and appropriate manner from actual experience and past trends in experience of other similar types of business, either in the same company, in other companies (including reinsurance companies), or from other sources, generally in that order of preference.

If the relevant company experience for a particular X factor class and other relevant experience are insufficient to form an assumption, the appointed actuary should use professional judgment in assessing anticipated mortality, taking into account where, in the spectrum of mortality experience, such business would be expected to fall relative to the mortality experience for other X factor classes.

The appointed actuary should take into account the effect that lapsation or nonrenewal activity has had or would be expected to have on mortality. The appointed actuary should specifically take into account the adverse effect of any anticipated or actual increase in gross premiums on lapsation, and the resultant effect on mortality due to antiselection. The appointed actuary should also take into account any known positive and negative changes in mortality due to the environment in which the company operates and the possible net adverse impact on mortality associated with those changes.

The appointed actuary should consider the presence of reinsurance in deriving anticipated mortality, as noted in section 3.4. The anticipated mortality on reinsured business, both assumed and ceded, should pertain to that on the reinsured lives and exclude the effect of experience refunds or other adjustments, however characterized in the reinsurance agreements.

- 3.6 **Periodic Assessment of Anticipated Mortality**—The appointed actuary should annually review relevant emerging experience for the purpose of assessing the appropriateness of anticipated mortality for each X factor class and, in aggregate, for all X factor classes combined. If the appointed actuary chooses to continue to use the prior anticipated mortality assumptions, then the appointed actuary should determine whether the prior anticipated mortality assumptions are appropriate in light of any relevant emerging experience. Statistical analyses may be useful in making this determination. Other quantitative analyses may be used provided the appointed actuary can satisfactorily support such analyses as being sufficient to assess the appropriateness of anticipated mortality.

If the results of statistical or other testing indicate that previously anticipated mortality for a given X factor class is inappropriate, then the appointed actuary should set a new anticipated mortality assumption for the X factor class.

After analyzing the appropriateness of the anticipated mortality for each X factor class in isolation and adjusting anticipated mortality as necessary, the appointed actuary should analyze the appropriateness of the anticipated mortality assumptions at the aggregate level. If analysis at the aggregate level indicates that aggregate anticipated mortality is inadequate, then the appointed actuary should adjust the anticipated mortality assumption for one or more X factor classes until the appointed actuary is satisfied that the anticipated mortality assumptions are adequate at the aggregate level.

- 3.7 **Adjustments to X Factors**—The appointed actuary should use the anticipated mortality (without recognition of mortality improvement beyond the valuation date) for each X factor class, as adjusted for relevant emerging experience, for the purpose of determining whether the X factors for the class meet the requirements of the *Model*. If any requirement of the *Model* is not satisfied, the appointed actuary should adjust the X factors for the class to the extent necessary to meet such requirement.

The appointed actuary should consider the trend in mortality when deciding whether to adjust X factors, as permitted by the *Model*. The level and trend of mortality experience on similar types of business in other companies, or from other sources, if available, would be an important consideration in making this decision.

- 3.8 **Basis of Exposure**—The appointed actuary should analyze the level and trend of actual mortality experience primarily by using exposures based on amounts or units of insurance. These measures are most meaningful from the standpoint of financial impact on the company. Other measures of exposure, such as number of lives, can also be useful in analyzing experience.

Section 4. Communications and Disclosures

- 4.1 **Required Communications**—The opinion required by section 3.2 applies to all policies on specified plans of insurance for which the company has elected to apply *Model* select

mortality factors for purposes of calculating deficiency reserves. For policies (on such specified plans) without X factors applied, the opinion should reflect implied X factors of 100%.

- 4.1.1 Opinion—The opinion should indicate, as of the valuation date, whether the mortality rates resulting from the application of the company's X factors meet the requirements of the *Model*. If the mortality rates do not meet all the requirements, a qualified opinion should be rendered, disclosing those requirements that are not met.
- 4.1.2 Actuarial Report—An actuarial report should be prepared in support of the opinion. The report should include at least the following items:
 - a. Purpose—The report should indicate its purpose and refer to the specific opinion that it supports.
 - b. Specified Plans—The report should identify the specific plans of insurance for which the company has elected to apply *Model* select mortality factors for the purpose of calculating deficiency reserves. The report should briefly describe each plan, including its markets and underwriting bases, and indicate for each X factor class of business on the plan the amount in force on the valuation date in terms of policy or rider count, face amount, basic reserves, and deficiency reserves.
 - c. X Factor Compliance—The report should describe the process and key results which demonstrate that the X factors for the specified plans of life insurance comply with each of the requirements of the *Model*. The report should describe, to the extent applicable, each of the following:
 1. company experience studies, industry experience, and other sources of information concerning relevant experience used as a basis for determining anticipated mortality, including a summary of the findings and results;
 2. analyses performed to evaluate the credibility of relevant, historical company experience when establishing anticipated mortality for each X factor class, including a description of related experience or a statement that professional judgement had been used;
 3. mortality projections made and reflected in anticipated mortality, if any, from the period of exposure of relevant experience studies to the valuation date;
 4. statistical or other quantitative analyses performed in assessing the continued appropriateness of the anticipated mortality assumption

for each X factor class and for all X factor classes in aggregate, in light of relevant emerging company experience, and a summary of changes made as a result of the analyses;

5. anticipated mortality, without recognition of mortality improvement beyond the valuation date, for each X factor class and for all X factor classes in aggregate;
 6. results of the tests of X factors required by the *Model*, any adjustments made to the X factors as a result of these tests, and the effect on deficiency reserves resulting from any such adjustments; and
 7. any changes made in the approach or parameters applied to the statistical analyses or tests performed compared to those performed at the last annual valuation.
- d. Schedule of X Factors—The report should include a schedule showing for the specified plans of life insurance the X factors for each X factor class as of the valuation date, with an indication as to which X factors are new or have been changed since the last annual valuation.

4.1.3 Additional Disclosures—The actuary should include the following, as applicable, in the actuarial report or statement of actuarial opinion:

- a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Documentation—The appointed actuary should create records and other appropriate documentation supporting the opinion required by section 3.2 and, to the extent practicable, should take reasonable steps to ensure that this documentation will be retained for a reasonable period of time (and no less than the length of time necessary to comply with any statutory regulatory, or other requirements). The appointed actuary need not retain the documentation personally; for example, it may be retained by the appointed actuary's employer. Such documentation should identify the data, assumptions, and methods used by the appointed actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the appointed

actuary's work. Unless the actuarial report required by section 4.1.2 reasonably satisfies the need for documentation, such documentation should also be available to the appointed actuary's employer or client.

- 4.3 Reliance on Data Supplied by Others—The appointed actuary may rely on data supplied by other persons. In doing so, the appointed actuary should disclose such reliance in the opinion. The accuracy and completeness of data supplied by others are the responsibility of those who supply the data. However, the appointed actuary should review the data for reasonableness and consistency to the extent practicable. For further guidance, the appointed actuary is directed to ASOP No. 23, *Data Quality*.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

On plans of life insurance elected by the company, the National Association of Insurance Commissioners (NAIC) Valuation of Life Insurance Policies Model Regulation (*Model*) allows the use of *Model* select mortality factors to be applied to the 1980 CSO valuation tables for purposes of calculating deficiency reserves. The *Model* select mortality factors do not reflect the underwriting classes that have evolved since the period of underlying experience. In light of this consideration, the *Model* allows the appointed actuary to adjust the select factors via X factors to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience. However, the *Model* requires the appointed actuary to opine annually that the adjusted mortality rates meet certain requirements set forth in the *Model*, and that such opinion be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

Current Practices

Although there is no established current practice for complying with the requirements of the *Model*, there are several current analytical procedures that the appointed actuary may find useful in developing and reviewing anticipated mortality.

Developing Anticipated Mortality

The process of using a company's relevant experience of the recent past to set an assumption for future mortality experience can, when the exposure is large enough, proceed by using the average level of the past experience, as modified by trend factors and known changes in the environment. But often the exposure may not be large enough, either because the company is small or because a small or newer segment of a large company is the subject of the assumption. In such cases, actuaries frequently turn to the experience of other companies or other segments (appropriately modified) to help set the assumption. Such procedures are specifically recommended for forming mortality assumptions to be used in testing sales illustrations, as specified in Actuarial Standard of Practice (ASOP) No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

Often the appointed actuary finds it necessary to blend the experience from two or more sources in order to set the assumption. Sometimes a life actuary will consider the guidance, to the extent

relevant, set forth in ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, even though that standard is not specifically applicable to individual life actuarial practice.

For some purposes, such as selecting a valuation mortality rate that will stand up in the face of moderate future fluctuations in mortality, the appointed actuary may wish to select an X factor that yields a mortality rate higher than the appointed actuary's assumption for anticipated mortality, i.e., a level of assumed mortality that has a reasonably high probability of exceeding the actual mortality that may emerge in the future. To accomplish this, the appointed actuary needs an understanding of the underlying distribution of potential mortality results.

When mortality studies are based on lives or policies exposed, either the Normal distribution (with 35 or more deaths) or the Poisson distribution (with fewer than 35 deaths) can provide a satisfactory approximation of the distribution of deaths. However, neither of these approximations accounts for varying experience across different policy sizes.

Monte Carlo methods overcome concerns about whether the experience contains a large enough data set for the Poisson or Normal approximations to be sufficiently accurate, and are particularly useful for analyses that are based on amounts of insurance or units of insurance exposed. These methods produce results that converge to the underlying distribution given enough trials.

Assessment of Anticipated Mortality

There are several methods for analyzing the appropriateness of anticipated mortality in light of emerging company experience.

Hypothesis testing is one useful technique. The appointed actuary should be aware of two types of errors associated with hypothesis testing. A Type I error is the false rejection of a correct null hypothesis, while a Type II error is the failure to reject an incorrect null hypothesis. In terms of the *Model*, the null hypothesis would presumably state that anticipated mortality is consistent with emerging experience and would only be rejected if statistically significant data indicated otherwise. In this setting, the Type I error is a company increasing anticipated mortality when it is in fact adequate, while a Type II error is a company failing to increase anticipated mortality when it is in fact inadequate. The Type I error rate can be controlled by the choice of significance level. Type II error rates are largely beyond the control of the statistician and difficult to assess, but are influenced by the choice of significance level, the amount of data available, and the magnitude of the difference between the assumed and true values.

Another approach to analyzing anticipated mortality is to treat each review of the mortality assumption as if it were the original development of the mortality assumption, making use of the now more extensive experience base. For example, the appointed actuary could use the emerging experience, plus any other experience considered relevant, to set a new assumption, and use that, or a higher level based on selecting a high probability of adequacy, as the new assumption.

Credibility procedures are also available. Such procedures may be useful when blending data from two or more sources. By extension, credibility procedures may be useful for incorporating emerging experience into an existing body of experience.

This appendix does not provide an exhaustive list of possible approaches to analyzing anticipated mortality. Actuarial literature and other sources of information provide specific guidance to the appointed actuary on various analyses that may be useful in analyzing anticipated mortality. The appointed actuary should be aware of the limitations of applying any statistical procedure to a body of data. The appointed actuary should use reasonable judgment and consider modifying the X factors if the level of emerging mortality experience is substantially greater than expected, regardless of whether the anticipated mortality for the X factor class is deemed acceptable through statistical testing. As current practices evolve, the appointed actuary should consider whether the techniques used in prior analyses continue to be appropriate or can be improved.

Appendix 2

Comments on the Second Exposure Draft and Task Force Responses

The second exposure draft of this actuarial standard of practice was issued in June 2000, with a comment deadline of October 15, 2000. (Copies of the exposure draft and second exposure draft are available from the ASB office.) Four comment letters were received. The Task Force on XXX Regulation of the Life Committee of the ASB carefully considered all comments received. Summarized below, printed in standard type, are the significant issues and questions contained in the comment letters. The task force's responses to these issues and questions appear in **boldface**.

Section 3. Analysis of Issues and Recommended Practices

Section 3.4, Creation of X Factor Classes—One commentator found the additional language in this section regarding reinsurance to be helpful, clear, and provided uniformity of application, while another commentator believed further clarification was necessary. **The task force added clarification with respect to reinsurance.**

Section 3.5.2, Deriving Anticipated Mortality—One commentator believed that a reference in this section to ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, would be appropriate. **The task force disagreed, based on the fact that ASOP No. 25 is not specifically applicable to life insurance. ASOP No. 25 is mentioned in appendix 1.**

One commentator felt that clarification is needed with respect to experience refunds and other adjustments under reinsurance agreements. **The task force agreed and provided clarification at the end of section 3.5.2.**

Section 3.6, Periodic Assessment of Anticipated Mortality—One commentator made a general comment about the need to apply actuarial judgment when evaluating the anticipated mortality assumption. **Although this is a general statement, the task force changed the second sentence in the first paragraph to clarify that the appointed actuary is making a decision whether to continue using the existing anticipated mortality assumption.**

Appendix 1. Background and Current Practices

One commentator noted that cautionary language was part of the discussion of hypothesis testing but not used in the discussion of other possible approaches for analyzing anticipated mortality. This commentator also mentioned that the appointed actuary needs to use professional judgment regarding methods and data. **The task force agrees with these comments. The cautionary language was rewritten and moved from the hypothesis testing discussion to the last paragraph of this appendix. At the same time, the task force made some additional wording changes to provide more consistency and readability with respect to the terminology used in the appendix.**



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 41**

Actuarial Communications

Revised Edition

**Developed by the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2010**

(Doc. No. 120)

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ASOP No. 41—December 2010

December 2010

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Actuarial Communications

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 41

This document contains the final version of the revision of ASOP No. 41, *Actuarial Communications*.

Background

The current version of ASOP No. 41 has been in effect for eight years, and applies to all U.S. actuaries in all areas of practice. During that time, the ASB has received comments regarding a lack of clarity in the document and confusion in respect to its wording and structural arrangement. One of the ASB's priorities is to make sure that all ASOPs are clear and unambiguous.

First Exposure Draft

In September 2008, the ASB approved the first exposure draft of a revised ASOP No. 41 with a comment deadline of December 31, 2008. Twenty-three comment letters were received. Most had multiple comments, many of which were substantive. The majority of commentators were supportive of the effort to revise this ASOP, and most comments were positive in nature, but some indicated that the first draft needed significant revision.

In September 2008, the ASB also adopted “Revision of Deviation Language for Standards and Removal of References to PSAs from Standards” pending the issuance of ASOP No. 41 as a final revision. Due to the passage of time since that adoption, the ASB will update this document to reflect changes in ASOP No. 41, as well as to update references for other new and revised ASOPs. It is expected that the ASB will adopt this document as a final revision at its March meeting, with an effective date of May 1, 2011, consistent with the effective date of this revised standard.

Second Exposure Draft

In December 2009, the ASB approved a second exposure draft of a revised ASOP No. 41, reflecting significant modifications of the first draft, with a comment deadline of March 31, 2010. Thirty-seven comment letters were received in response. For a summary of the substantive issues contained in the second exposure draft comment letters and the responses, please see appendix 2.

Changes from Second Exposure Draft

The review and revision of the second exposure draft focused on the dominant issue raised in 19 of 37 comment letters; namely, the apparent requirement for an actuary to complete an actuarial report with full disclosures in nearly all circumstances. This was not the intent of the second exposure draft, but the reviewers were sensitive to this possible interpretation. Accordingly, this final version reflects clarification to the guidance within this standard, in particular to recognize that in some internal and informal settings, complete disclosure of all applicable supporting information is neither practical nor necessary. Section 3.3 (formerly section 3.5) has been moved and expanded to provide guidance in these situations. Additional discussion has also been added to appendix 1.

In response to other comments some definitions have been added and other clarifying modifications have been made.

Summary of Key Changes from Current ASOP

1. The concept of a single formal actuarial report, which is required to contain all necessary disclosures, has been removed. Instead, the concept that communication is an ongoing and interactive process and that an actuarial report with all necessary disclosure elements may comprise several different pieces of communication, perhaps delivered in different forms, has been adopted. The standard directs the actuary to identify all applicable documents whenever multiple documents are used to satisfy all of the disclosure requirements of an actuarial report.
2. Section 3.4.4 makes it clear that the actuary is responsible for all actuarial assumptions and methods utilized in producing the actuarial communication, unless the actuary discloses otherwise.
3. Section 3 has been reorganized. All disclosure requirements have been moved to section 4, while additional guidance relating to disclosures remains in section 3.4.
4. The treatment of deviations from the guidance of any ASOP (including situations where assumptions are not set by the actuary) is also codified in section 4.
5. Reference to Prescribed Statements of Actuarial Opinion (PSAOs) has been removed.
6. The ASB has decided that specifying what material should be retained and for how long is not appropriate for this standard (except as may be provided in section 3.8).

The General Committee thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in December 2010 to adopt this standard.

ASOP No. 41—December 2010

General Committee of the ASB

Thomas K. Custis, Chairperson	
Michael S. Abroe	William J. Schreiner
Peter Hendee	Martin M. Simons
Godfrey Perrott	Chester J. Szczepanski

Actuarial Standards Board

Albert J. Beer, Chairperson	
Alan D. Ford	Patricia E. Matson
Patrick J. Grannan	Robert G. Meilander
Stephen G. Kellison	James J. Murphy
Thomas D. Levy	James F. Verlautz

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 41

ACTUARIAL COMMUNICATIONS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries with respect to actuarial communications.
- 1.2 **Scope**—This standard applies to actuaries issuing actuarial communications within any practice area. This standard does not apply to communications that do not include an actuarial opinion or other actuarial findings (for example, this standard does not apply to brochures, fee quotes, or invoices).

This standard provides guidance for preparing actuarial communications, including those that may be required by the *Qualification Standards* or by other ASOPs. If such other guidance contains communication requirements that are additional to or inconsistent with this standard, the requirements of such other guidance supersede the guidance of this ASOP. However, the guidance in this ASOP applies to the extent it is not inconsistent with such other guidance.

Law, regulation, or another profession’s standards may prescribe the form and content of a particular actuarial communication (such as a government form). In such situations, the actuary should comply with the guidance in this standard to the extent not prohibited by applicable law, regulation, or standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason, the actuary should refer to section 4 regarding deviation.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial communications issued on or after May 1, 2011.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Communication**—A written, electronic, or oral communication issued by an actuary with respect to actuarial services.
- 2.2 **Actuarial Document**—An actuarial communication in any recorded form (such as paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts). Notes taken by someone other than the actuary are not considered actuarial documents.
- 2.3 **Actuarial Finding**—The result (including advice, recommendations, opinions, or commentary on another actuary’s work) of actuarial services.
- 2.4 **Actuarial Report**—The set of actuarial documents that the actuary determines to be relevant to specific actuarial findings that is available to an intended user.
- 2.5 **Actuarial Services**—Professional services provided to a principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings, or opinions based upon actuarial considerations.
- 2.6 **Deviation**—The act of departing from the guidance of an ASOP.
- 2.7 **Intended User**—Any person who the actuary identifies as able to rely on the actuarial findings.
- 2.8 **Oral Communication**—An actuarial communication made orally that has not, to the knowledge of the actuary, been recorded or transcribed verbatim. Such an oral communication is an actuarial communication, but is not an actuarial document.
- 2.9 **Other User**—Any recipient of an actuarial communication who is not an intended user.
- 2.10 **Principal**—A client or employer of the actuary.

Section 3. Analysis of Issues and Recommended Practices

3.1 **Requirements for Actuarial Communications**—The performance of a specific actuarial engagement or assignment typically requires significant and ongoing communications between the actuary and the intended users regarding the following: the scope of the requested work; the methods, procedures, assumptions, data, and other information required to complete the work; and the development of the communication of the actuarial findings.

3.1.1 **Form and Content**—The actuary should take appropriate steps to ensure that the form and content of each actuarial communication are appropriate to the particular circumstances, taking into account the intended users.

3.1.2 **Clarity**—The actuary should take appropriate steps to ensure that each actuarial communication is clear and uses language appropriate to the particular circumstances, taking into account the intended users.

3.1.3 **Timing of Communication**—The actuary should issue each actuarial communication within a reasonable time period, unless other arrangements as to timing have been made. In setting the timing of the communication, the needs of the intended users should be considered.

3.1.4 **Identification of Responsible Actuary**—An actuarial communication should clearly identify the actuary responsible for it. When two or more individuals jointly issue a communication (at least some of which is actuarial in nature), the communication should identify all responsible actuaries, unless the actuaries judge it inappropriate to do so. The name of an organization with which each actuary is affiliated also may be included in the communication, but the actuary's responsibilities are not affected by such identification. Unless the actuary judges it inappropriate, the actuary issuing an actuarial communication should also indicate the extent to which the actuary is available to provide supplementary information and explanation.

3.2 **Actuarial Report**—The actuary should complete an actuarial report if the actuary intends the actuarial findings to be relied upon by any intended user. The actuary should consider the needs of the intended user in communicating the actuarial findings in the actuarial report.

An actuarial report may comprise one or several documents. The report may be in several different formats (such as formal documents produced on word processing, presentation or publishing software, e-mail, paper, or web sites). Where an actuarial report for a specific intended user comprises multiple documents, the actuary should communicate which documents comprise the report.

In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary with sufficient clarity

that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary’s work as presented in the actuarial report.

- 3.3 **Specific Circumstances**—The content of an actuarial report may be constrained by circumstances. The actuary should follow the guidance of this standard to the extent reasonably possible within such constraints. When those constraints exist, it may be appropriate not to include some of the otherwise required content in the actuarial report. However, limiting the content of an actuarial report may not be appropriate if that report or the findings in that report may receive broad distribution.

If the actuary believes circumstances are such that including certain content is not necessary or appropriate, the actuary must be prepared to identify such circumstances and justify limiting the content of the actuarial report.

- 3.4 **Disclosures Within an Actuarial Report**—Consideration of the items to be disclosed is an important part of the preparation of any actuarial communication. The actuary should review the list of required disclosure items included in section 4 of this ASOP, and in any other relevant ASOP. Further discussion regarding some of these disclosure items follows:

- 3.4.1 **Uncertainty or Risk**—The actuary should consider what cautions regarding possible uncertainty or risk in any results should be included in the actuarial report.
- 3.4.2 **Conflict of Interest**—An actuary who is not financially, organizationally, or otherwise independent concerning any matter related to the subject of an actuarial communication should disclose any pertinent information that is not apparent. This includes any situation where the actuary acts, or may appear to be acting, as an advocate. However, applicable financial disclosure is limited in accordance with Precept 6 of the *Code of Professional Conduct* to sources of material compensation that are known to, or are reasonably ascertainable by, the actuary.
- 3.4.3 **Reliance on Other Sources for Data and Other Information**—An actuary who makes an actuarial communication assumes responsibility for it, except to the extent the actuary disclaims responsibility by stating reliance on other sources. Reliance on other sources for data and other information means making use of those sources without assuming responsibility for them. An actuarial communication making use of any such reliance should define the extent of reliance, for example by stating whether or not checks as to reasonableness have been applied. An actuary may rely upon other sources for information, except where limited or prohibited by applicable standards of practice or law or regulation. Further guidance on when such reliance is appropriate, and what the actuary’s responsibilities are when such reliance is stated, is found in ASOP No.23, *Data Quality*.
- 3.4.4 **Responsibility for Assumptions and Methods**—An actuarial communication

should identify the party responsible for each material assumption and method. Where the communication is silent about such responsibility, the actuary who issued the communication will be assumed to have taken responsibility for that assumption or method. The actuary’s obligation when identifying the other party who selected the assumption or method depends upon how the assumption or method was selected.

- a. If the assumption or method is specified by applicable law (statutes, regulations, and other legally binding authority), the actuary should include the disclosures identified in section 4.2. These disclosures should be made whether or not the actuary believes the assumption or method is reasonable for the purpose of the communication. The actuary should also follow the guidance in paragraph (b) below whenever required by another ASOP.
- b. If a material assumption or method is selected by another party, the actuary has three choices:
 1. If the assumption or method does not conflict significantly with what, in the actuary’s professional judgment, would be reasonable for the purpose of the assignment, the actuary has no disclosure obligation;
 2. If the assumption or method significantly conflicts with what, in the actuary’s professional judgment, would be reasonable for the purpose of the assignment, the actuary must disclose that fact and the additional information specified in section 4.3; and
 3. If the actuary has been unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, or if the actuary was not qualified to judge the reasonableness of the assumption, the actuary should disclose that fact as specified in section 4.3.
- c. In all other situations, the actuary is responsible for all assumptions and methods utilized in the preparation of a communication unless the actuary discloses otherwise within the communication by including the disclosures identified in section 4.4.

3.4.5 Information Date of Report—The actuary should communicate to the intended user the date(s) through which data or other information has been considered in developing the findings included in the report.

3.4.6 Subsequent Events—The actuary should disclose any relevant event that meets the following conditions:

- a. it becomes known to the actuary after the latest information date described in section 3.4.5;
- b. it becomes known to the actuary before the report is issued;
- c. it may have a material effect on the actuarial findings if it were reflected in the actuarial findings; and
- d. it is impractical to revise the report before it is issued.

If the actuary learns of changes to data or other information (on or before the information date) after some findings have been communicated, but before the report is completed, the actuary should communicate those changes, and their implications, to any intended user to whom the actuary has communicated findings.

- 3.5 **Explanation of Material Differences**—If a later actuarial communication produced by the same actuary, which opines on the same issue, includes materially different results or expresses a different opinion from the former communication, then the later communication should make it clear that the earlier results or opinion are no longer valid and explain why they have changed. If the later communication is oral, the actuary should follow-up with a document that clarifies the reason(s) for the changes.
- 3.6 **Oral Communications**—When the actuary is providing an oral communication, the actuary should consider the extent to which (if any) the disclosures listed under section 3.4 should be included in the oral communication and include each such disclosure if appropriate in the particular circumstances. Where the actuary has a concern that the oral communication may be passed on to other parties, the actuary should consider following up with an actuarial document.
- 3.7 **Responsibility to Other Users**—An actuarial document may be used in a way that may influence persons who are not intended users. The actuary should recognize the risks of misquotation, misinterpretation, or other misuse of such a document and should take reasonable steps to ensure that the actuarial document is clear and presented fairly. To help prevent misuse, the actuary may include language in the actuarial document that limits its distribution to other users (for example, by stating that it may only be provided to such parties in its entirety or only with the actuary's consent).
- Nothing in this standard creates an obligation for the actuary to communicate with any person other than the intended users.
- 3.8 **Retention of Other Materials**—An actuary may choose to keep file material other than that which is to be disclosed under this ASOP. Nothing in this ASOP requires the actuary to disclose such additional materials to any party.

If, as may be appropriate in accordance with section 3.3., a report does not include all of the supporting information identified in this ASOP, the actuary should consider retaining the supporting information that was not included in the report. The actuary is not required to create additional documentation for this purpose.

An actuary should consider retaining sufficient information for any recurring project so that another actuary could assume the assignment.

Section 4. Communications and Disclosures

4.1 **Disclosures in any Actuarial Communication**—Disclosures in any actuarial communication should include the following:

- 4.1.1 **Identification of Responsible Actuary**—Any actuarial communication should identify the actuary who is responsible for the actuarial communication (see section 3.1.4).
- 4.1.2 **Identification of Actuarial Documents**—Any actuarial document should include the date and subject of the document with any additional modifier (such as “version 2” or time of day) to make this entire description unique.
- 4.1.3 **Disclosures in Actuarial Reports**—In addition to the information necessary to satisfy section 3.2, any actuarial report should disclose the following information, unless the actuary determines that it is inappropriate to do so (see section 3.3):
 - a. the intended users of the actuarial report;
 - b. the scope and intended purpose of the engagement or assignment;
 - c. the acknowledgement of qualification as specified in the *Qualification Standards*;
 - d. any cautions about risk and uncertainty (see section 3.4.1);
 - e. any limitations or constraints on the use or applicability of the actuarial findings contained within the actuarial communication including, if appropriate, a statement that the communication should not be relied upon for any other purpose;
 - f. any conflict of interest as described in section 3.4.2;
 - g. any information on which the actuary relied that has a material impact on the actuarial findings and for which the actuary does not assume responsibility (see section 3.4.3);

- h. the information date as described in section 3.4.5;
- i. subsequent event(s) (if any) as described in section 3.4.6.; and
- j. if appropriate, the documents comprising the actuarial report.

Note that other ASOPs that apply to a particular assignment may have additional disclosure requirements that should also be followed.

4.2 **Certain Assumptions or Methods Prescribed by Law**—Where any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority), the actuary should disclose the following in the actuarial report:

- a. the applicable law under which the report was prepared;
- b. the assumptions or methods that are prescribed by the applicable law; and
- c. that the report was prepared in accordance with the applicable law.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.3 **Responsibility for Assumptions and Methods**—In any situation not covered under section 4.2, where the actuary states reliance on other sources (as described in section 3.4.4(b) 2 and 3) and thereby disclaims responsibility for any material assumption or method, the actuary should disclose the following in the actuarial report, unless it is inappropriate to do so (see section 3.3):

- a. the assumption or method that was set by another party;
- b. the party who set the assumption or method;
- c. the reason that this party, rather than the actuary, has set the assumption or method; and
- d. either
 - 1. that the assumption or method significantly conflicts with what, in the actuary’s professional judgment, would be reasonable for the purpose of the assignment; or
 - 2. that the actuary was unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, and did not do so, or that the actuary

was not qualified to judge the reasonableness of the assumption.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.4

Deviation from the Guidance of an ASOP—If, in the actuary’s professional judgment, the actuary has deviated materially from the guidance set forth in an applicable ASOP, other than as covered under sections 4.2 or 4.3 of this standard, the actuary can still comply with that ASOP by providing an appropriate statement in the actuarial communication with respect to the nature, rationale, and effect of such deviation.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

The current version of ASOP No. 41, adopted in March 2002, was adapted from and superseded Interpretative Opinion No. 3, *Professional Communications of Actuaries*. Interpretive Opinion No. 3 was itself adopted by the American Academy of Actuaries in 1981. The 2002 version of ASOP No. 41 conformed to the format adopted by the Actuarial Standards Board in May 1996 for all actuarial standards of practice, and while this standard generally followed Interpretative Opinion No. 3, it also expanded upon, clarified, and eliminated portions of that opinion.

This standard offers guidance to complement the requirements imposed by the *Code of Professional Conduct*. It was drafted and is still intended to help actuaries apply the *Code of Professional Conduct* when making professional communications (by written, electronic, or oral means) to clients, employers, regulators, policyholders, plan participants, investors, and other users of actuarial services. Actuaries commonly deal with confidential or proprietary information. The *Code of Professional Conduct* clearly precludes the actuary from disclosing this type of information to inappropriate parties.

This revision has used definitions that are consistent with those found in the *Code of Professional Conduct* and in the recently revised *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinions*. This revision also incorporates language in section 4 that is the foundation of the ASB's new approach to creating consistency in the treatment of deviation language within all ASOPs.

It should be noted that all recorded forms of communication (including—but not limited to—paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts) could be considered records of such communications and may be, therefore, discoverable in legal proceedings.

Current Practices

Actuaries are currently guided by the *Code of Professional Conduct*, by ASOP No. 41, and by other actuarial standards of practice, depending on the nature of the work at hand.

In general, actuarial communications are provided in order to answer questions or address specific needs of one or more intended users. Actuarial communications may be made available to a variety of users of actuarial work products including clients, employers, regulators, policyholders, plan participants, and investors, as well as external audiences such as the general public. Actuarial communications may be delivered in many forms, including written, electronic,

or oral; and may stand alone or be part of a broader pattern of communication. While preparing an actuarial communication, an actuary should be mindful of the needs and concerns of each of the intended users. In certain situations, some intended users may receive different actuarial documents. Thus, an actuarial report for one intended user may differ from the report for a different intended user. Even the least comprehensive version of an actuarial report is subject to the guidance of this standard.

An actuary, while functioning in a professional capacity, may be involved in informal communication with others. Actuarial findings may be communicated under circumstances that make inclusion of all supporting information impractical or unnecessary. This may be particularly common in a company environment. Other circumstances such as severe time constraints (for example, union negotiations, mergers and acquisitions) may make inclusion of all recommended disclosure items impractical, if not impossible. In these instances, the content of the actuarial report is often limited. These situations are addressed in section 3.3.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Actuarial Communications*, was issued in December 2009 with a comment deadline of March 31, 2010. Thirty-seven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The General Committee carefully considered all comments received, reviewed the exposure draft and proposed changes. The ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the General Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	Several commentators raised the issue of a potential deficiency in guidance should the proposed ASOP No. 41 be adopted as final at the same time current ASOP No. 9, <i>Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations</i> , is withdrawn.
Response	The reviewers do not believe that this issue can or should be resolved within ASOP No. 41.
Comment	One commentator believed that the distinction between the guidance for “oral only communication” (for example, a phone call) and guidance for e-mail may not be practical.
Response	The reviewers disagree. E-mail creates a permanent record that can be discovered and referred to in subsequent proceedings (legal or otherwise). Accordingly, the reviewers believe that it is appropriate to consider e-mail as a “document” and subject to the applicable guidance.
Comment	Several commentators expressed concern that the guidance in the second exposure draft was slanted to the consulting environment and not practical within many company situations.

Response	The reviewers did not intend this interpretation. In rewriting the final version of ASOP No. 41 the reviewers have attempted to be more sensitive to this issue. It is not the intention of this ASOP to impose unnecessary burdens on the internal communications of an organization.
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TRANSMITTAL MEMORANDUM

Question 1: Is the revised concept of an actuarial report reflected in this draft both clear and appropriate?

Comment	Nineteen commentators responded to this question; only one responded in the affirmative. Most interpreted the second exposure draft to significantly “raise the bar,” requiring a full-fledged report in many situations where it would be neither necessary nor practical.
Response	This interpretation was not the intent of the second exposure draft. The reviewers have been sensitive to these concerns in this revision. Section 3.3 of this standard has been expanded to clarify the guidance in those circumstances where it is not necessary or practical to include all supporting information. Additional discussion was added to appendix 1.

Question 2: Is the revised ASB position on documentation appropriate?

Comment	A few commentators felt it was appropriate. The ones that disagreed were those that raised concerns about the withdrawal of ASOP No. 9 (see the first “General” comment above).
Response	After considering the comments, the reviewers still believe that the general approach is appropriate. Some modifications have been made to section 3.8 to incorporate guidance in those situations where full supporting information is not supplied within the document(s) of an actuarial report.

Question 3: Does this revised draft incorporate an appropriate emphasis on the need for the actuary to consider the needs of the intended users?

Comment	The few commentators that did respond to this question answered in the affirmative. One suggested that the second exposure draft may have gone too far in this regard.
Response	The reviewers believe that the purpose of an actuarial communication is to satisfy the needs of the intended user. Accordingly, this final version has retained this perspective.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Comment	Two commentators made suggestions with respect to the description of the standard's guidance.
Response	The description has been revised.
Comment	One commentator expressed concern that the term “actuarial opinion” is not defined.
Response	The reviewers believe that “actuarial opinion” is well understood and did not add a definition.
Comment	One commentator suggested an expansion of the commentary on which communications did not fall within the purview of the standard.
Response	The reviewers believe that the wording is satisfactory.
SECTION 2. DEFINITIONS	
Comment	Several commentators suggested that the definitions in the ASOP adopt the definitions in the Qualification Standards.
Response	The reviewers agreed and adopted the Qualification Standards’ definitions for “actuarial communication” and “actuarial services.”
Comment	One commentator suggested that “actuarial services” be clearly defined.
Response	A definition consistent with the Qualification Standards has been added. Furthermore, the definition of “actuarial finding” was modified to tie more consistently to this definition.
Comment	One commentator suggested that definitions be added for “data,” “methods,” and “procedures.”
Response	The reviewers concluded that the meanings of these terms were well understood and specific definitions were not needed.
Comment	Several commentators were concerned that the proposed standard can be read to imply that any notes taken by an actuary may be considered an actuarial document.

Response	The reviewers do not believe that an actuary's notes constitute an actuarial communication unless they are provided to an intended user. If an actuary does not distribute his/her notes to an intended user, there is no actuarial communication and the personal notes taken by the actuary are not subject to the requirements of ASOP No. 41. If either the notes or the material contained in the notes is distributed to an intended user or becomes part of the actuarial report, this creates an actuarial communication and the resulting documents would be subject to the requirements of the standard.
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Section 2.1, Actuarial Communication

Comment	A few commentators suggested that the word “electronic” be deleted from definition 2.1, stating that actuarial communications may be written or oral. Either type (written or oral) can be in electronic or hard copy form. One commentator noted the definition of “actuarial communication” deleted the current reference to a principal.
Response	The reviewers retained the definition to remain consistent with the <i>Code of Professional Conduct</i> and the Qualification Standards.

Section 2.6, Intended Audience

Comment	Several commentators suggested deletion of the definition “intended audience” and that definitions be provided for “principal” and “actuarial services.”
Response	The reviewers agree with these suggestions and have removed the definition of “intended audience” and provided definitions for “principal” and “actuarial services.”

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 3.1, Requirements for Actuarial Communications

Comment	One commentator requested the definition of “principal” be retained; another questioned the usage in sections 3.1.3 and 3.2.
Response	The reviewers agreed. The definition of “principal” from the <i>Code of Professional Conduct</i> was added, and it was used only when appropriate in the context of the guidance throughout the standard.
Comment	One commentator requested wording in section 3.1 and the addition of a section 3.1.5 to make it clear that, when an actuary communicates to the designated representative of a group of intended users, the actuary is deemed to have communicated to the group.

Response	The reviewers considered this a non-actuarial issue and made no change.
Section 3.1.2, Clarity	
Comment	One commentator felt the phrase “language appropriate to the particular circumstances, taking into account the intended audience” needed further guidance.
Response	The reviewers believe this language is sufficient; not all circumstances can be anticipated.
Section 3.1.3, Timing of Communication	
Comment	Several commentators questioned the wording of section 3.1.3, while one commentator preferred the “guidance” in appendix 1 of the Qualification Standards.
Response	The reviewers agreed and revised section 3.1.3. The reviewers note that appendix 1 of the Qualification Standards is not guidance, and made no change on this account.
Section 3.1.4, Identification of Responsible Actuary	
Comment	Several commentators suggested revised wording for section 3.1.4.
Response	The reviewers were generally satisfied with the wording in the exposure draft but did incorporate minor changes.
Section 3.2, Actuarial Report	
Comment	Several commentators felt that the ASB had “raised the bar” too much in section 3.2 or that the wording seemed only to address consulting situations.
Response	The reviewers modified and expanded former section 3.5 and moved it to section 3.3 to clarify that an actuarial report may be abbreviated in certain situations.
Comment	One commentator felt that the requirement to provide adequate information so that another actuary could assess the reasonableness of the findings was more than was needed if the report was directed to non-actuaries.
Response	Absent circumstances allowing for an abbreviated report under section 3.3, the reviewers believe that information sufficient to make an objective appraisal of the work is a valuable standard. This information does not have to detract from the understandability of a report; it can be presented separately, such as in an appendix.

Comment	One commentator indicated that the principal, as well as the actuary, should be able to determine what was relevant to an actuarial report.
Response	The reviewers disagreed and did not include such authority for the principal.

Section 3.3 (formerly 3.5), Specific Circumstances

Comment	Two commentators suggested that further examples or clarification of time pressure was needed.
Response	The reviewers believe this is accomplished as part of the modification of this section for clarity, and the additional discussion added to appendix 1.

Section 3.4.2 (formerly 3.3.2), Conflict of Interest

Comment	One commentator requested a definition of “information.”
Response	The reviewers did not feel such a definition was needed and made no change.

Section 3.4.4 (formerly 3.3.4), Responsibility for Assumptions and Methods

Comment	One commentator felt that the actuary is always responsible for the assumptions and methods; that the lead paragraph of 3.4.4 should so state and that 3.4.4.c. should be deleted. A second commentator suggested that the ASOP should allow the actuary to simply disclose that the assumption or method was not set by the actuary and does not represent the actuary’s professional judgment.
Response	The reviewers disagree with both commentators. The first position is not practical in all situations. The second position would be an overly broad exception enabling an actuary to inappropriately avoid professional responsibility. The reviewers believe that the revisions to section 3.4.4 in this version of the standard strike the proper balance between professional responsibility and real-life practicality.
Comment	Two commentators wondered whether “specified by law” (section 3.4.4(a)) could be interpreted to include situations (FAS 87) where assumptions are specified by a third party under some binding authority.
Response	The reviewers believe the language and intent are clear. FAS 87 situations (and all circumstances where the assumption or method is not specified within law) fall under section 3.4.4(b).

Section 3.4.4(b) (formerly 3.3.4(b)), Responsibility for Assumptions and Methods

Comment	One commentator suggested rewording to accommodate assumptions the actuary is not qualified to make.
Response	The reviewers agreed and changed the wording of 3.4.4(b)(3) and 4.3(d)(2) to reflect this.
Comment	One commentator thought that the actuary should be required to provide an affirmative statement of agreement with assumptions that “do not conflict significantly with what the actuary considers to be reasonable.”
Response	The reviewers believe this would be an impractical and unnecessary requirement.
Section 3.4.4(c) (formerly 3.3.4(c), Responsibility for Assumptions and Methods	
Comment	One commentator suggested removing the word “prominently.”
Response	The reviewers agreed and removed it.
Section 3.4.5 (formerly 3.3.5), Information Date of Report	
Comment	One commentator suggested making dates plural as different information may have different dates.
Response	The reviewers agreed and changed the word to “date(s).”
Section 3.4.6 (formerly 3.3.6), Subsequent Events	
Comment	Two commentators suggested wording changes.
Response	The reviewers agreed and changed some words.
Comment	One commentator suggested that if an actuary is aware of an event that has a material effect on the findings, then it is possible that the actuary would need to submit a revised report.
Response	The reviewers agree, but recognize that this is not always possible. Section 3.4.6(d) has been added to clarify this situation.
Section 3.5 (formerly 3.4), Reconciliation of Material Differences	
Comment	Several commentators suggested “reconcile” was too strong a requirement, and “same assignment” was imprecise.
Response	The reviewers agreed and revised this section.
Section 3.6, Oral Communications	

Comment	One commentator expressed concern that “passed on to other parties” was too broad, and should be restricted to intended users.
Response	The reviewers disagreed and made no change.
Section 3.8, Documentation	
Comment	One commentator felt the actuary should take reasonable steps to ensure that another qualified actuary could take over the work if necessary.
Response	The reviewers agreed and revised this section.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1.2, Identification of Actuarial Documents	
Comment	One commentator suggested that this provision seems overly broad and cumbersome, and should be removed.
Response	The reviewers disagreed, feeling identification of documents is important, and made no change.
Section 4.1.3, Disclosures in Actuarial Reports	
Comment	One commentator felt that a report provided by the actuary will be so laden down by disclosures that clear and concise communications will be difficult.
Response	The reviewers disagreed and made no change. They noted that disclosures could be in a separate section of the report from the findings, and so do not prevent clarity of communication.
Comment	One commentator felt section 4.1.3 should be expanded to include disclosures required by section 3.4.4.
Response	The reviewers disagreed and made no change. The disclosures required by section 3.4.4 are addressed in sections 4.2 and 4.3.
Comment	One commentator felt section 4.1.3 should reference the exceptions addressed in section 3.3.
Response	The reviewers agreed and referenced section 3.3 in section 4.1.3.
Comment	One commentator felt where the actuarial report consists of more than one document, the actuary should disclose the documents that comprise the full report.

Response	The reviewers agreed and added paragraph j. to section 4.1.3.
Comment	One commentator felt that “on which the actuary relied” should be moved to immediately after “any information.”
Response	The reviewers agreed and made this change.
Comment	One commentator felt it would be helpful to include examples to clarify the phrase “unless it is inappropriate to do so.”
Response	The reviewers felt that incorporating a list of examples may limit the actuary’s judgment, and made no change.
Section 4.2, Certain Assumptions or Methods Prescribed by Law	
Comment	One commentator requested that section 4.2 should be expanded to clarify that assumptions and methods prescribed by or under the authority of FASB, should be treated as “prescribed by law.”
Response	The reviewers disagreed in part and made no change. An assumption or method prescribed by FASB would come under section 4.2 (assuming FASB is “other binding authority”). An assumption or method prescribed by a third party under the authority of FASB would not be covered by section 4.2.
Section 4.3, Responsibility for Assumptions and Methods	
Comment	One commentator questioned whether every assumption or method used for a monthly valuation had to be addressed in each actuarial report, or could reference be made to a master document?
Response	The reviewers made no change as this is the intent of section 3.2, which recognizes that an actuarial report often consists of multiple documents. The master document referred to in the comment fits this concept well.
Comment	One commentator questioned the need to disclose in an internal document “the reason why the other party set the assumption or method”
Response	The reviewers agreed and qualified section 4.3 by reference to section 3.3.
Comment	One commentator suggested adding a section 4.3(d)(3) with language such as “that the actuary agreed with the assumption or method.”
Response	The reviewers made no change, since section 4.3 is only triggered if the actuary disowns the assumption or method.

ASOP No. 41—December 2010

Comment	One commentator pointed out that the guidance in this section is different than the guidance for similar situations under section 5.4.5 of ASOP No. 20.
Response	The reviewers believe the guidance in this section is appropriate to the general situation and have made no change. Section 1.2 of this standard states that where guidance of other standards conflicts with the guidance in this standard, the other standard applies.

Section 4.4, Deviation From the Guidance of an ASOP

Comment	One commentator objected to the revision of section 4.4 (from the existing ASOP) and requested the original language be retained.
Response	The reviewers disagreed and made no change. The reviewers believe that the disclosures required under section 4.4 are adequately strong to address the concerns of the commentator. The revised section 4.4 is part of the ASB initiative to move all substantive guidance on deviation into ASOP No. 41 (and thus achieve consistency across ASOPs.) Part of this initiative is to clarify that “deviation” means deviating from the guidance of an ASOP. Compliance with the ASOP is still possible through adequate disclosure.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 42**

**Health and Disability Actuarial Assets and Liabilities
Other Than Liabilities for Incurred Claims**

Revised Edition

**Developed by the
Task Force to Revise ASOP No. 42 of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2018**

Doc. No. 191

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March 2018

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Health and Disability Liabilities Other Than Liabilities for Incurred Claims

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 42

This document contains the final version of a revision of ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*.

History of the Standard

The ASB originally adopted ASOP No. 42, then titled *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*, in 2004 and updated the ASOP for deviation language in 2011.

This revision of ASOP No. 42 reflects a number of changes to other standards that have been made since its 2004 adoption, including updating the ASOP, where appropriate, to incorporate references to new standards that have since been issued, eliminate guidance that does not conform to current ASOP practices regarding references to other standards of practice, and make consistent the definitions used in the standard with those of other standards of practice. In addition, this revision of ASOP No. 42 reflects relevant legal, regulatory, and practice developments that have occurred since its initial adoption.

Exposure Draft

The exposure draft was released in May 2017 with a comment deadline of September 30, 2017. Five comment letters were received. For a summary of the issues contained in the comment letters on the exposure draft and the responses, please see appendix 2.

Notable Changes from the Exposure Draft

Notable changes include the following:

1. added a definition and guidance on collectability; and
2. added section 3.16, Reliance on Experts, to further support the guidance on collectability.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in March 2018 to adopt this standard.

ASOP No. 42—Doc. No. 191

Task Force to Revise ASOP No. 42

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 42

**HEALTH AND DISABILITY ACTUARIAL ASSETS AND
LIABILITIES OTHER THAN LIABILITIES FOR INCURRED CLAIMS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries estimating or reviewing **health benefit plan** actuarial assets and liabilities, other than liabilities for incurred claims, when preparing or reviewing financial reports, claims studies, rates, or other actuarial communications as of a **valuation date**. This ASOP complements ASOP No. 5, *Incurred Health and Disability Claims*.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to estimating or reviewing **health benefit plan** actuarial assets and liabilities, other than liabilities for incurred claims, on behalf of **risk-bearing entities**. This standard does not address interpretations of statutory or generally accepted accounting practices.

This standard does not apply to actuaries when estimating or reviewing assets or liabilities in accordance with other ASOPs, such as ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, and ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*. Furthermore, this standard does not apply in situations where a health or disability benefit is included within, and is incidental to, a plan subject to another practice-specific standard, such as a disability benefit under a life plan or a 401(h) account that is part of a pension plan.

This standard applies to the actuary only with respect to asset and liability estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*). Actions taken by the actuary's principal regarding the use of such estimates are beyond the scope of this standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard will be effective for any actuarial work product with a **valuation date** on or after August 1, 2018.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Block of Business**—All policies of a common coverage type (for example, major medical, preferred **provider** organization, or capitated managed care), demographic grouping (for example, size, age, or area), contract type, or other segmentation used in estimating assets and liabilities for actuarial purposes, or used by a **risk-bearing entity** for evaluating its business.
- 2.2 **Capitation**—The amount of money paid to a **provider** on a periodic basis to provide specific health care services under a **health benefit plan** regardless of the number or types of services actually rendered during the contractual period. The payments are usually quantified on a per covered member basis.
- 2.3 **Carved-Out Services**—Contractually designated services such as prescription drugs or dental, or condition-specific services such as cancer, mental health, or substance abuse treatment, excluded from a **capitation, risk-sharing**, or other contractual arrangement.
- 2.4 **Collectability**—The likelihood of receiving the amount of money owed.
- 2.5 **Contract Period**—The time period for which a contract is effective.
- 2.6 **Contract Reserve**—An amount established when a portion of the premium due prior to the **valuation date** is designed to pay all or a part of the claims expected to be incurred after the **valuation date**. A **contract reserve** may or may not include a provision for the **unearned premium reserves**. A **contract reserve** may also be referred to as an active life reserve or policy reserve.
- 2.7 **Exposure Unit**—A unit by which the cost for a **health benefit plan** is measured. For example, an **exposure unit** may be a contract, an individual covered, \$100 of weekly salary, or \$100 of monthly benefit.
- 2.8 **Health Benefit Plan**—A contract, such as an insurance policy, or other financial arrangement providing medical, prescription drug, dental, vision, disability income, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the **risk-bearing entity**.
- 2.9 **Long-Term Product**—A **health benefit plan** that provides medical or disability benefits for an extended period of time. Some examples are cancer, long-term care, and long-term

disability policies. The plan's benefits may not become payable for several years after policy purchase and claims usually extend beyond the **valuation date**.

- 2.10 **Premium Deficiency Reserve**—A liability representing the deficiency, if any, in future revenues and current reserves less future claims and related expenses.
- 2.11 **Providers**—Individuals, groups, or organizations providing health care services or supplies, including but not limited to doctors, hospitals, independent physician associations, accountable care organizations, physical therapists, medical equipment suppliers, and pharmaceutical suppliers.
- 2.12 **Provider-Related Asset or Liability**—An amount established for expected future incentive payments or receipts or for non-claim related amounts such as **risk-sharing arrangement** and **capitation** payments or receipts.
- 2.13 **Risk Adjustment Data Validation (RADV)**—The process of verifying the accuracy of information submitted for use in a risk adjustment model.
- 2.14 **Risk-Bearing Entity**—The entity with respect to which the actuary is estimating liabilities or assets associated with **health benefit plans** or **risk-sharing arrangements**. Examples of risk bearing entities include but are not limited to managed-care entities, insurance companies, health care **providers**, self-funded employer plans, and government-sponsored plans or risk contracts.
- 2.15 **Risk-Sharing Arrangement**—An arrangement involving two or more entities, calling for payments contingent upon certain financial, operational, or other metrics. Examples include, but are not limited to, **provider risk-sharing arrangements** such as **provider** incentives, bonuses, and withhold or governmental **risk-sharing arrangements** such as risk corridor and risk-adjustment programs.
- 2.16 **Time Value of Money**—The principle that an amount of money available at an earlier point in time has different usefulness and value than the same amount of money has at a later point in time.
- 2.17 **Trends**—Measures of rates of change, over time, of the elements, such as cost, incidence, and severity, affecting the estimation of certain assets or liabilities.
- 2.18 **Unearned Premium Reserve**—An amount established to reflect premiums that have been collected prior to the **valuation date** for coverage after the **valuation date**.
- 2.19 **Valuation Date**—The date as of which the assets or liabilities are estimated.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Introduction**—The estimation of actuarial assets and liabilities is fundamental to the practice of health actuaries. It is necessary for the completion of financial statements; for the analysis and projection of **trends**; for the analysis or development of rates; and for the development of various management reports, regardless of the type of **risk-bearing entity**.
- 3.2 **Purpose or Use of the Asset or Liability Estimate**—The actuary should identify the intended purpose or use of the estimate. Potential purposes or uses of estimates include, but are not limited to, estimates for external financial reporting, pricing, internal management reporting, appraisal work, and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider making adjustments to accommodate the multiple purposes to the extent that, in the actuary’s professional judgment, it is appropriate and practical to make such adjustments.
- 3.3 **Considerations for Estimating Assets and Liabilities**—The actuary should include items associated with the estimation that, in the actuary’s professional judgment, are applicable, material, and are reasonably foreseeable to the actuary at the time of estimation.

In determining which items to include in the estimation of assets and liabilities, the actuary should consider items including but not necessarily limited to those described below and may rely on others as described in sections 3.14, 3.15, and 3.16.

- 3.3.1 **Health Benefit Plan Provisions and Business Practices**—The actuary should consider the **health benefit plan** provisions and related business practices, including special group contract holder requirements and **provider** arrangements, which in the actuary’s judgment may materially affect the cost, frequency, and severity of claims. These include, for example, elimination periods, deductibles, preexisting conditions limitations, maximum allowances, and managed-care restrictions.

The actuary should make a reasonable effort to understand any changes in plan provisions or business practices made since the last estimate of assets or liabilities. The actuary should consider how such differences or changes are likely to affect the estimation of assets or liabilities.

- 3.3.2 **Risk-Sharing Arrangement Provisions**—The actuary should consider the **risk-sharing arrangement** provisions that, in the actuary’s professional judgment, are likely to materially affect the financial results of the **risk-sharing arrangement**. Examples of such provisions include the following:

- a. for **risk-sharing arrangements** including a **provider** organization, allowances for items such as number of enrolled lives included, the results of membership satisfaction surveys, and actual usage of certain facilities; and

- b. for **risk-sharing arrangements** including a governmental organization, such as medical loss ratio rebates, required adjustments to premiums or claims.

When estimating an asset related to an amount receivable by the **risk-bearing entity** under such a **risk-sharing arrangement**, the actuary should reflect **collectability**.

- 3.3.3 **Economic and Other External Influences**—The actuary should consider economic and other external influences such as changes in price levels, unemployment levels, medical practice, managed care contracts, cost shifting, **provider** fee schedule changes, medical procedures, epidemics or catastrophic events, and adverse selection sometimes experienced in recessionary periods or prior to contract termination.
- 3.3.4 **Risk Characteristics and Organizational Practices by Block of Business**—The actuary should consider how marketing, underwriting, and other business practices can influence the types of risks accepted. Claims administration practices can influence claim rates and **trends** and in turn influence actuarial asset and liability estimates. Furthermore, the pattern of growth or contraction and relative maturity of a **block of business** can influence the magnitude of actuarial assets or liabilities.
- 3.3.5 **Legislative and Regulatory Requirements**—The actuary should consider relevant legislative and regulatory requirements and changes as they pertain to the estimation of assets and liabilities. For example, governmental mandates can influence the provision of new benefits, risk characteristics, care management practices, rating, reserving and underwriting practices, methods used to estimate assets and liabilities, or claims processing practices.
- 3.3.6 **Coordination of Benefits (COB), Subrogation, and Government Programs**—The actuary should make a reasonable effort to understand the relevant organizational practices and regulatory requirements related to COB, subrogation, and government programs (state or federal). The actuary should consider how these items are reflected in the data (for example, negative claims or income) and make appropriate adjustments for COB, subrogation, and payments or recoveries resulting from government programs.
- 3.3.7 **Carved-Out Services**—The actuary should consider the pertinent benefits, payment arrangements, and separate reporting of those benefits subject to **carved-out services** in the estimation of assets and liabilities.
- 3.3.8 **Time Value of Money**—The actuary should consider if the **time value of money** will have a material effect in the estimation of assets and liabilities. The use of any interest discounts depends on the purpose for which assets and liabilities are

being estimated and should reflect any applicable regulation or accounting standards.

3.3.9 **Special Considerations for Long-Term Products**—The actuary should consider the benefits available in **long-term products**, such as lump-sum, fixed, or variable payments for services; provisions such as cost of living adjustments and inflation protections; payment differences based on institutional or home-based care; social insurance integration; and the criteria for benefit eligibility.

3.3.10 **Reinsurance Arrangements**—The actuary should consider the effect of reinsurance arrangements in estimating assets and liabilities. In particular, the actuary should consider the effect of extended reporting or recovery periods, **collectability**, collection delay, any amounts already received, and any regulatory limitations associated with certain types of reinsurance. Reinsurance arrangements may also include risk-sharing provisions.

3.3.11 **Non-Claim Expenses**—The actuary should consider whether an explicit provision for non-claim expenses should be included, or whether a particular asset or liability implicitly provides for future non-claim expenses.

3.3.12 **Consistency of Assumptions and Methodology**—The actuary should use assumptions and methodology consistent with those used for estimating related assets, liabilities and reserves, such as incurred **health benefit plan** claims, unless it would be inappropriate to do so.

3.4 **Considerations for Estimating Contract Reserves**—The actuary should estimate a **contract reserve** when such a reserve is required by the rating approach. For example, **contract reserves** are typically estimated for entry-age-rated **health benefit plans** (where premium rates are based on entry age and may be level over the lifetime of the contract), or where flat premium rate guarantees or premium rate change limitations apply for multiple-year periods. The actuary may estimate the reserve using a seriatim basis, grouping techniques, or a combination of both. The actuary should use assumptions that are reasonable and consistent with the purpose for which the reserve is being calculated, and reasonable in the aggregate. Certain assumptions may vary over time or be subject to durational effects.

3.4.1 **Interest Rates**—The actuary should use interest rates to reflect the **time value of money** in the present value calculation and should consider items such as the projection period and market conditions.

3.4.2 **Morbidity**—The actuary should use morbidity assumptions that reflect the underlying risk. These assumptions may reflect factors such as age, gender, and marital status of the insured as well as the elimination period and dependent status. In addition, the actuary should take into account the impact of durational effects such as risk selection and pre-existing condition limitations, changes in **health benefit plans**, changes in **provider** agreements, adverse selection due to

premium rate increases and plan design, and other factors that, in the actuary's professional judgment, materially affect future claim payments.

- 3.4.3 **Persistency**—The actuary should consider using persistency or termination assumptions that include both involuntary terminations, such as deaths and disablements, and voluntary terminations, as appropriate. Voluntary termination assumptions, if any, should reflect the expected impact of future premium rate increases.
 - 3.4.4 **Non-Claim Expenses**—The actuary should consider whether using an assumption is appropriate for expenses such as maintenance, acquisition, and claim settlement.
 - 3.4.5 **Trend**—The actuary should consider using trend assumptions for inflation, utilization, morbidity, and expense rates.
 - 3.4.6 **Premium Rate Changes**—When using an assumption to reflect premium rate changes in the reserve calculation, the actuary should use a premium rate change assumption that is reasonable in relation to the projected claims costs and the manner in which the rate change will be implemented (for example, on a given date for an entire **block of business** or on the next policy anniversary). This assumption should take into account factors such as market conditions, regulatory restrictions, and rate guarantees.
 - 3.4.7 **Previous Assumptions for Estimating Contract Reserves**—The actuary may determine that assumptions used as of a prior **valuation date** are no longer appropriate and may change them in accordance with the standards of the financial statements in which the reserves are reported. If the actuary determines that a change in assumptions is warranted, the actuary should follow the process set forth in sections 3.4.1-3.4.6 when selecting new **contract reserve** assumptions for future **valuation dates**.
 - 3.4.8 **Valuation Method**—For a new policy form, in addition to the assumptions discussed above, the actuary may need to determine the valuation method. Examples of valuation methods are the gross premium method, the net level premium method, and the full preliminary term (one- or two-year) method. Except where the valuation method is prescribed, the actuary should choose a method appropriate for the intended use of the reserve, such as in statutory financial statements or analysis of operating income. When not using a net level premium method, the actuary should consider the expense structure, such as higher first-year costs, in selecting the valuation method.
- 3.5 **Considerations for Estimating Premium Deficiency Reserves**—The actuary should estimate a **premium deficiency reserve** when such a reserve is required. **Premium deficiency reserves** are typically established for financial reporting purposes. They may also be established for other purposes such as management reporting. When estimating

premium deficiency reserves, the actuary should use reasonable assumptions that are appropriate for the intended purpose, and also reasonable in the aggregate.

- 3.5.1. **Blocks of Business**—The actuary should consider blocks of business in a manner consistent with applicable financial reporting requirements. The characteristics of a **block of business** may include, but are not limited to, benefit type (for example, major medical, preferred **provider** organization, or capitated managed care), contract type (for example, group or individual policies), demographic grouping (for example, group size or geographical area), and length of rate guarantee period. A **block of business** should be large enough so that its financial results are material relative to the **risk-bearing entity** as a whole. The actuary may need to estimate a **premium deficiency reserve** for a **block of business** where a premium deficiency exists even if the **contract period** has not started.
- 3.5.2. **Time Period**—The actuary should use the **valuation date** as the beginning of the time period used to project losses from a **block of business**. In determining the end of the time period, the actuary should take into account items including, but not limited to, the end of the **contract period**, anticipated renewal of coverage, and the point at which the block no longer requires a **premium deficiency reserve**.
- 3.5.3. **Exposure**—The actuary should consider reasonable increases and decreases in **exposure units** over the time period of the calculation in the **premium deficiency reserve** calculation. This assumption should reflect changes due to factors including, but not limited to, morbidity, mortality, lapses, and the impact of expected premium rate changes.
- 3.5.4. **Premium Rate Changes**—When using a premium rate change assumption, the actuary should use an assumption that is reasonable in relation to the projected claims costs and the **risk-bearing entity**'s expectations. This assumption should consider factors such as market conditions, regulatory restrictions, and rate guarantees.
- 3.5.5. **Claim Trend**—The actuary should consider factors that may materially affect future claim payments, such as durational effects, changes in **health benefit plans**, changes in **provider** agreements, adverse selection due to premium rate increases, and plan design.
- 3.5.6. **Risk-Sharing Arrangements**—The actuary should consider **risk-sharing arrangements** between the **risk-bearing entity** and other entities, such as **providers**, governmental organizations, and employers. The actuary should reflect the **collectability** of any amounts under **risk-sharing arrangements**.

- 3.5.7 **Interest Rates**—When using an interest rate assumption to reflect the **time value of money** in a present value calculation, the actuary should consider items such as the projection period and market conditions.
- 3.5.8 **Reinsurance**—The actuary should consider the expected effects of reinsurance and changes in reinsurance premiums in estimating the **premium deficiency reserve**.
- 3.5.9 **Taxes**—The actuary should consider the effect of losses assumed in the calculation of the **premium deficiency reserve** on the **risk-bearing entity's** taxes and may include a tax credit in the calculations where appropriate.
- 3.5.10 **Non-Claim Expenses**—The actuary should consider total expenses of the **risk-bearing entity** in estimating a **premium deficiency reserve** and should consider whether the expenses allocated to the **block of business** are reasonable for the purpose of estimating **premium deficiency reserves**. If only a portion of expenses are allocated to the otherwise deficient **blocks of business**, the actuary should verify that the remaining blocks of business cover the remaining expenses.
- 3.5.11 **Applicable Authority**—The actuary should consider any applicable law, regulation, or other binding authority when estimating **premium deficiency reserves** for financial reporting.
- 3.6 **Reserve for Insufficient Administrative Fee for Self-Insured Contracts**—A liability under a self-insured contract may need to be established if the administrative fees are insufficient to cover the direct fixed and variable expenses allocated to the self-insured contract. When estimating such a liability, the actuary should consider the expected income and expense flows under the contract using methods that are similar to those used in estimating a **premium deficiency reserve** for an insured **health benefit plan** and assumptions that are appropriate for self-insured contracts (see section 3.5 for further discussion).
- 3.7 **Considerations When Estimating Provider-Related Assets and Liabilities**—**Provider-related liabilities** may arise for a **risk-bearing entity**. **Risk-sharing arrangements**, such as incentive arrangements, penalty arrangements, and **capitation** arrangements can create potential assets or liabilities.
- 3.7.1 **Provider Risk-Sharing and Capitation Arrangements**—The actuary should consider the relevant contractual arrangements with **providers** to determine whether the contractual arrangements require an asset or liability to be estimated.
- The actuary should consider whether a **provider-related asset or liability** for contracts in effect or not fully settled as of the **valuation date** should be estimated. In estimating the asset or liability, the actuary should consider any amounts due to or due from the **provider**, the overall financial condition of the **provider** (see section 3.7.2 for further discussion), whether losses can be offset

with profits, risk transfer arrangements (such as stop loss or quota share provisions), the timing of receipts and payments, and **collectability**.

Similarly, the actuary should consider whether the risk of a **provider** failing or leaving a network creates a need to estimate a liability for the contingency of the payment by the **risk-bearing entity** of higher **capitations** or fees for services while a replacement **provider** is identified and suitable arrangements are concluded.

- 3.7.2 **Provider Financial Condition**—When a **risk-bearing entity** shares risk with a **provider** under a risk-sharing or **capitation** arrangement, the actuary should estimate, to the extent practical, whether the **provider's** overall financial condition will allow it to meet its obligations, and, if not, adjust the asset or liability accordingly. To the extent that these assets or liabilities are not otherwise included in the claim liabilities of the **risk-bearing entity**, such assets or liabilities should be included in the **provider-related assets or liabilities**.
- 3.7.3 **Provider Incentive or Penalty Payments**—If a **provider** agreement calls for incentive or penalty payments if certain conditions are met, such as quality of care standards or claim targets, the actuary should consider whether the **risk-bearing entity** should record a **provider-related asset or liability**.
- 3.7.4 **Provider Risk-Bearing Entities**—When the **risk-bearing entity** is a **provider**, the actuary should also consider relevant contractual arrangements with other **providers** as well as non-**provider** entities to determine whether the contractual arrangements require an asset or a liability to be estimated. One primary source of potential liability between **providers** is the receipt of **capitation** by one **provider** with payments due to other **providers** using fee-for-service.
- 3.8 **Claim Adjustment Expense Liabilities**—The actuary should estimate a liability for claim adjustment expenses associated with unpaid claims, unless such liabilities are included in the liability for unpaid claims, otherwise provided for appropriately, or not required by the relevant financial reporting guidance. The actuary may consider the company's cost allocation approach in the liability estimation.
- 3.9 **Risk Adjustment Settlements**—A risk adjustment settlement may exist that will be either an asset or a liability to the **risk-bearing entity**. In addition to the relevant guidance in ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*, the actuary should address the following components of the risk adjustment program, if applicable:
 - 3.9.1 **Market Neutrality**—When the risk adjustment settlements are required to be revenue neutral across a market or other group of entities, the actuary should consider reasonably available aggregate market information, information specific to the **risk-bearing entity**, and **collectability**.

- 3.9.2 **Risk Adjustment Payment Methodology**—Risk adjustment payments typically follow a methodology that is governed by applicable law, regulation, or contractual arrangement. The actuary should review and understand the risk adjustment payment methodology used in estimating the settlement amounts.
- 3.9.3 **Risk Adjustment Data Validation (RADV) Audit**—The outcome of an **RADV** audit may be an amount that the insurer owes or is owed. When estimating the asset or liability that may be due from an **RADV** audit, the actuary should review relevant data validation reports.
- 3.10 **Other Assets and Liabilities**—The actuary may be requested to opine on the appropriateness of certain other assets or liabilities provided by another party. In some cases, the actuary may also estimate such assets and liabilities. When estimating or opining on such assets and liabilities, the actuary should refer to the appropriate section(s) below.
- 3.10.1 **Liabilities for Payments to State Pools**—The actuary should consider whether appropriate provision has been made for payments due under state assessment pools, such as insolvency pools, risk-sharing pools, or other arrangements.
- 3.10.2 **Reserves for Unearned Premiums**—The actuary should consider whether appropriate provision has been made for liabilities associated with the amount of premiums written and not yet earned.
- 3.10.3 **Assets and Liabilities for Dividends, Experience Rating, and Premium Rebates**—The actuary should consider the contract language or regulatory requirements defining the methodology prescribed for estimating the asset or liability, and refer to ASOP No. 5, if applicable.
- 3.10.4 **Reserves for Extension of Benefits and Contingent Benefits Provisions**—The actuary should consider whether the provisions of the **health benefit plan** require estimation of a reserve for extension of benefits or contingent benefits.
- 3.10.5 **Prescription Drug Rebates**—An asset may exist for an insurer receiving a rebate, or a liability may exist for a pharmaceutical firm or pharmacy benefits manager paying a rebate. The actuary should consider applicable rebate contracts or agreements. The actuary should consider any available historical drug usage, projected drug usage, and current emerging experience.
- 3.10.6 **Cost Sharing Subsidies**—Cost sharing subsidies may exist that pay for part or all of the cost sharing for eligible participants. Insurers may be paid on a budgeted basis with a final payment to or from the insurer based on the actual experience. The actuary should consider the following:
- a. applicable law, regulation, or other binding authority;

- b. the historical enrollment for members eligible for cost sharing subsidies;
 - c. any changes in the market that would impact the eligible enrollment;
 - d. any potential changes in the insurer's relative market position that could impact the eligible enrollment; and
 - e. **collectability.**
- 3.11 **Follow-Up Studies**—The actuary may conduct follow-up studies that involve performing tests of reasonableness of the prior period asset or liability estimates and the methods used over time. When conducting such follow-up studies, the actuary should, to the extent practicable, do the following:
- a. acquire the data to perform such studies;
 - b. perform studies in the aggregate or for pertinent blocks of business; and
 - c. utilize the results, if appropriate, in estimating assets and liabilities.
- 3.12 **Provision for Adverse Deviation**—Recognizing that assets and liabilities are an estimate of the value of true amounts that will emerge, the actuary should consider what explicit provision for adverse deviation, if any, might be appropriately included. If a provision for adverse deviation is included, the asset or liability should be appropriate, in the actuary's professional judgement, for the intended use.
- 3.13 **Evaluating Collectability**—The actuary should use professional judgment when evaluating **collectability** and may consider the following:
- a. materiality of the asset;
 - b. the expertise of other parties; and
 - c. other readily available information, such as financial statements.
- 3.14 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.15 **Reliance on Assumptions and Methods Selected by Others**—When relying on assumptions and methods selected by others, the actuary should refer to ASOP No. 41 for guidance.
- 3.16 **Reliance on Experts**—An actuary may rely on experts in their field of knowledge when estimating or reviewing actuarial assets and liabilities. In determining the appropriate

level of reliance, the actuary should consider whether the individual or individuals upon whom the actuary is relying are experts in the applicable field. The actuary should disclose the extent of any such reliance.

- 3.17 **Documentation**—The actuary should document the methods, assumptions, procedures, and the sources of the data used. The documentation should be in a form such that another actuary qualified in the same practice area could assess the reasonableness of the work.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should refer to ASOP Nos. 23 and 41. In addition, such actuarial communications should disclose the following, as applicable:

- a. important dates used in the analysis;
- b. significant limitations, if any, which constrained the actuary's asset or liability estimate analysis such that, in the actuary's professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result;
- c. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the asset or liability estimate;
- d. the risk that **provider** insolvency may have a material effect on the **risk-bearing entity**'s ultimate asset or liability, as described in section 3.7.2;
- e. any follow-up studies the actuary may have used in the development of the estimate of assets or liabilities, as described in section 3.11;
- f. any explicit provision for adverse deviation, as described in section 3.12;
- g. when updating a previous estimate, changes in assumptions, procedures, methods, or models that the actuary believes to have a material impact on the **health benefit plan** actuarial asset or liability estimate, as well as the reasons for such changes to the extent known by the actuary. The actuary may need to disclose these changes in cases other than when updating a previous estimate, consistent with the purpose or use of the **health benefit plan** actuarial asset or liability estimate. This standard does not require the actuary to measure or quantify the impact of such changes; and
- h. any reliance on experts, as described in section 3.16.

- 4.2 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:
- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Health benefit plan actuarial assets and liabilities other than incurred claims are important to many health lines of business. New forms of these assets and liabilities arose in recent years with the rapid increase in managed care provider risk arrangements and healthcare reform. The attention to financial statements enhanced the importance of these assets and liabilities.

Current Practices

Actuaries are able to obtain information relating to actuarial assets and liabilities for health benefit plan coverages from various publications from the National Association of Insurance Commissioners, including the following:

- the Accounting Practices and Procedures Manual;
- the Health Insurance Reserves Model Regulation; and
- the Health Reserves Guidance Manual.

Similar information on when assets and liabilities are required by Generally Accepted Accounting Principles is available in the Financial Accounting Standards Board's Statements of Financial Accounting Standards.

Estimating assets and liabilities may be necessary or useful in situations other than financial statement reporting, such as the acquisition of a block of a business or in experience analysis.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*, was issued in May 2017 with a comment deadline of September 30, 2017. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” includes the Task Force, Health Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator stated that the idea of collectability is treated differently in different sections of the ASOP and that actuaries are not equipped to opine on collectability.
Response	The reviewers agree that collectability was treated differently in various sections. Therefore, the reviewers made it clear and consistent throughout the ASOP, and added a definition for collectability. However, the reviewers disagree and believe that actuaries are equipped to opine on collectability. In addition, the reviewers further clarified the guidance, including adding language on reliance on experts.
SECTION 2. DEFINITIONS	
Section 2.1, Block of Business	
Comment	One commentator suggested more clarification regarding the definition for “policy.”
Response	The reviewers believe that current language is clear with respect to what “policy” means, and made no change.
Section 2.2, Capitation	
Comment	One commentator suggested clarifying the definition of “captiation” by including a reference to “periodic payments.”
Response	The reviewers agree and modified the definition.
Section 2.7, Health Benefit Plan (now section 2.8)	
Comment	One commentator suggested further clarification on whether accidental death and disability coverage is within the scope of a health benefit plan.
Response	The reviewers believe the current language is sufficient and, to the extent that accidental death and disability coverage has health coverage, it is part of a health benefit plan. Therefore, no change was made.
Section 2.8, Long-Term Product (now section 2.9)	
Comment	One commentator suggested that the definition for long-term product be clarified.
Response	The reviewers believe that the definition of long-term product is sufficiently clear and made no change.

Comment	One commentator suggested that the definition of long-term product could be more clear with respect to when the benefits commence and when the benefits become payable.
Response	The reviewers agree and revised the definition to be more clear when benefits are payable.
Section 2.11, Provider-Related Asset or Liability (now section 2.12)	
Comment	One commentator felt that the definition for provider-related asset or liability needed clarification.
Response	The reviewers agree and provided examples to clarify the language.
Comment	One commentator suggested adding examples to the definition for provider-related assets or liabilities that may not arise from a risk-sharing arrangement.
Response	The reviewers agree and provided an example to clarify the language.
Section 2.12, Risk Adjustment Data Validation (RADV) (now section 2.13)	
Comment	One commentator suggested changing the risk adjustment data validation definition to clarify there are numerous risk adjustment models and not just one model.
Response	The reviewers agree and modified the definition for clarity.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.3.3, Economic and Other External Influences	
Comment	One commentator suggested revising the language regarding claims that might occur prior to contract termination.
Response	The reviewers agree and have revised the language.
Section 3.3.6, Coordination of Benefits (COB), Subrogation, and Government Programs	
Comment	One commentator suggested that the government programs described in section 3.3.6 are risk-sharing arrangements with the government and that this should be made clearer.
Response	The reviewers believe the government programs referred to may include provisions other than risk-sharing arrangements. Therefore, no change was made.
Comment	One commentator suggested that the governmental programs in section 3.3.6 be broken out or moved.
Response	The reviewers believe that governmental programs that are being referred to should be kept in this section since the section deals with similar adjustments that may be needed to the data due to governmental programs or coordination of benefits. Therefore, the reviewers made no change.
Section 3.3.10, Reinsurance Arrangements	
Comment	One commentator suggested that it should be clarified that the reinsurance risk-sharing provisions fall within risk-sharing arrangements.
Response	The reviewers believe that the wording is sufficiently clear, and made no change.
Section 3.3.11, Expenses	
Comment	One commentator suggested further clarification as to what expenses mean.
Response	The reviewers agree and have revised the language to reflect that expenses mean non-claim expenses.
Section 3.5, Considerations for Estimating Premium Deficiency Reserves	
Comment	Two commentators suggested clarification on the exposure units to be used for future contract periods. One commentator suggested further guidance on which time periods should be included in the calculation.
Response	The reviewers believe the current language strikes a balance of providing guidance while not being too prescriptive, and made no change.

Section 3.5.7, Interest Rates	
Comment	One commentator suggested further clarification regarding duration.
Response	The reviewers agree and have provided more clarity by using projection period instead of duration.
Section 3.7.1, Provider Risk-Sharing and Capitation Arrangements	
Comment	One commentator suggested that the wording regarding the overall financial condition of the provider be consistent with section 3.7.2, Provider Financial Condition.
Response	The reviewers believe the language is appropriate in both sections and provided a reference in section 3.7.1 to see section 3.7.2 for further discussion.
Section 3.8, Claim Adjustment Expense Liabilities	
Comment	One commentator suggested clarification regarding to what items claims adjustment expenses apply.
Response	The reviewers believe the current wording is appropriate as it clarifies that claims adjustment expenses are associated with unpaid claims, and made no change.
Section 3.11, Follow-Up Studies	
Comment	One commentator suggested that the language should be changed to reflect that actuaries should conduct follow-up studies on the prior period asset or liability.
Response	The reviewers believe that follow-up studies are important but the section should not be overly prescriptive. The reviewers note that there are situations where actuaries may choose not to do a follow-up study, for example if the asset or liability is considered to be immaterial, and made no change.
Section 3.12, Provision for Adverse Deviation	
Comment	One commentator suggested additional clarification regarding when a provision for adverse deviation may be required or may be appropriate.
Response	The reviewers believe that the current language provides adequate guidance, and made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator suggested the wording of materiality in section 4.1(d) may be confusing.
Response	The reviewers believe the use of the word materiality is clear and direct the commentator to ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , for the definition of materiality, and made no change.
Comment	One commentator suggested that an example in section 4.1(g) would clarify when an actuary may need to disclose changes.
Response	The reviewers believe the current wording is appropriate regarding when disclosure of changes is needed and made no change.
APPENDIX (now Appendix 1)	
Comment	One commentator suggested clarification of the organization that publishes the Statements of Financial Accounting Standards.
Response	The reviewers agree and added the organization that promulgates the Statements of Financial Accounting Standards.



**Actuarial Standard
of Practice
No. 43**

Property/Casualty Unpaid Claim Estimates

**Developed by the
Subcommittee on Reserving of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2007
Updated for Deviation Language Effective May 1, 2011**

(Doc. No. 159)

T A B L E O F C O N T E N T S

Transmittal Memorandum

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June 2007

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Property/Casualty Unpaid Claim Estimates

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 43

This booklet contains the final version of ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*.

Background

Currently, no ASOP exists to provide guidance to actuaries developing unpaid claim estimates. ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, provides guidance to the actuary in issuing a written statement of actuarial opinion but not in developing an unpaid claim estimate. The Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* contains some guidance. However, that document is currently under review and the revised document is expected to contain significantly less guidance than the current version. Therefore, to address this issue, the ASB charged the Subcommittee on Reserving of the ASB Casualty Committee with creating an ASOP to provide guidance to actuaries regarding property/casualty unpaid claim estimates.

First Exposure Draft

The first exposure draft of this ASOP was approved for exposure in February 2006 with a comment deadline of June 30, 2006. Thirty-two comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was approved for exposure in February 2007 with a comment deadline of May 1, 2007. The Subcommittee on Reserving carefully considered the nine comment letters received and made changes to the language in several sections in response. For a summary of the issues contained in these comment letters, please see appendix 2.

Due to the volume of comments received throughout the exposure period on the Actuarial Central Estimate concept, an additional appendix (see appendix 3) was added to address the

comments.

The Subcommittee on Reserving thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in June 2007 to adopt this standard.

Subcommittee on Reserving of the Casualty Committee

Raji Bhagavatula, Chairperson

Ralph S. Blanchard	Chandrakant Patel
Edward W. Ford	David S. Powell
Louise A. Francis	Jason L. Russ
Margaret Wendy Germani	Lee R. Steeneck
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ACTUARIAL STANDARD OF PRACTICE NO. 43

PROPERTY/CASUALTY UNPAID CLAIM ESTIMATES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to the estimation of loss and loss adjustment expense for unpaid claims for property/casualty coverages. Any reference to “unpaid claims” in this standard includes (unless explicitly stated otherwise) the associated unpaid claim adjustment expense even when not accompanied by the estimation of unpaid claims.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services related to developing unpaid claim estimates only for events that have already occurred or will have occurred, as of an accounting date, exclusive of estimates developed solely for ratemaking purposes. This standard applies to the actuary when estimating unpaid claims for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables.

This standard applies to the actuary only with respect to unpaid claim estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*) in written or electronic form. Actions taken by the actuary’s principal regarding such estimates are beyond the scope of this standard.

The terms “reserves” and “reserving” are sometimes used to refer to “unpaid claim estimates” and “unpaid claim estimate analysis.” In this standard, the term “reserve” is limited to its strict definition as an amount booked in a financial statement. Services described above are covered by this standard, regardless as to whether the actuary refers to the work performed as “reserving,” “estimating unpaid claims” or any other term.

This standard does not apply to the estimation of items that may be a function of unpaid claim estimates or claim outcomes, such as (but not limited to) loss-based taxes, contingent commissions and retrospectively rated premiums.

This standard does not apply to unpaid claims under a “health benefit plan” covered by ASOP No. 5, *Incurred Health and Disability Claims*, or included as “health and disability liabilities” under ASOP No. 42, *Determining Health And Disability Liabilities Other Than Liabilities for Incurred Claims*. However, this standard does apply to health benefits

associated with state or federal workers compensation statutes and liability policies.

With respect to discounted unpaid claim estimates for property/casualty coverages, this standard addresses the determination of the undiscounted value of such estimates. The actuary should be guided by ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations to reflect the effects of discounting.

An actuary may develop an unpaid claim estimate in the context of issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves. This standard addresses the determination of the unpaid claim estimate. The actuary should be guided by ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations associated with the issuance of such a statement.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial work product covered by this standard's scope produced on or after September 1, 2007.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Central Estimate**—An estimate that represents an expected value over the range of reasonably possible outcomes.
- 2.2 **Claim Adjustment Expense**—The costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid.
- 2.3 **Coverage**—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.
- 2.4 **Event**—The incident or activity that triggers potential for claim or claim adjustment expense payment.

- 2.5 Method—A systematic procedure for estimating the unpaid claims.
- 2.6 Model—A mathematical or empirical representation of a specified phenomenon.
- 2.7 Model Risk—The risk that the methods are not appropriate to the circumstances or the models are not representative of the specified phenomenon.
- 2.8 Parameter Risk—The risk that the parameters used in the methods or models are not representative of future outcomes.
- 2.9 Principal—The actuary’s client or employer. In situations where the actuary has both a client and an employer, as is common for consulting actuaries, the facts and circumstances will determine whether the client or the employer (or both) is the principal with respect to any portion of this standard.
- 2.10 Process Risk—The risk associated with the projection of future contingencies that are inherently variable, even when the parameters are known with certainty.
- 2.11 Unpaid Claim Estimate—The actuary’s estimate of the obligation for future payment resulting from claims due to past events.
- 2.12 Unpaid Claim Estimate Analysis—The process of developing an unpaid claim estimate.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 Purpose or Use of the Unpaid Claim Estimate—The actuary should identify the intended purpose or use of the unpaid claim estimate. Potential purposes or uses of unpaid claim estimates include, but are not limited to, establishing liability estimates for external financial reporting, internal management reporting, and various special purpose uses such as appraisal work and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider adjustments to accommodate the multiple purposes to the extent that, in the actuary’s professional judgment, it is appropriate and practical to make such adjustments.
- 3.2 Constraints on the Unpaid Claim Estimate Analysis—Sometimes constraints exist in the performance of an actuarial analysis, such as those due to limited data, staff, time or other resources. Where, in the actuary’s professional judgment, the actuary believes that such constraints create a significant risk that a more in-depth analysis would produce a materially different result, the actuary should notify the principal of that risk and communicate the constraints on the analysis to the principal.
- 3.3 Scope of the Unpaid Claim Estimate—The actuary should identify the following:
- a. the intended measure of the unpaid claim estimate;

1. Examples of various types of measures for the unpaid claim estimate include, but are not limited to, high estimate, low estimate, median, mean, mode, actuarial central estimate, mean plus risk margin, actuarial central estimate plus risk margin, or specified percentile.

As defined in section 2.1, the actuarial central estimate represents an expected value over the range of reasonably possible outcomes. Such range of reasonably possible outcomes may not include all conceivable outcomes, as, for example, it would not include conceivable extreme events where the contribution of such events to an expected value is not reliably estimable. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This description is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.

The terms “best estimate” and “actuarial estimate” are not sufficient identification of the intended measure, as they describe the source or the quality of the estimate but not the objective of the estimate.

2. The actuary should consider whether the intended measure is appropriate to the intended purpose or use of the unpaid claim estimate.
 3. The description of the intended measure should include the identification of whether any amounts are discounted.
 - b. whether the unpaid claim estimate is to be gross or net of specified recoverables;
 - c. whether and to what extent collectibility risk is to be considered when the unpaid claim estimate is affected by recoverables;
 - d. the specific types of unpaid claim adjustment expenses covered in the unpaid claim estimate (for example, coverage dispute costs, defense costs, and adjusting costs);
 - e. the claims to be covered by the unpaid claim estimate (for example, type of loss, line of business, year, and state); and
 - f. any other items that, in the actuary’s professional judgment, are needed to describe the scope sufficiently.
- 3.4 **Materiality**—The actuary may choose to disregard items that, in the actuary’s professional judgment, are not material to the unpaid claim estimate given the intended purpose and use. The actuary should evaluate materiality based on professional judgment, taking into account the requirements of applicable law and the intended purpose of the unpaid claim estimate.

3.5 Nature of Unpaid Claims—The actuary should have an understanding of the nature of the unpaid claims being estimated. This understanding should be based on what a qualified actuary in the same practice area could reasonably be expected to know or foresee as being relevant and material to the estimate at the time of the unpaid claim estimate analysis, given the same purpose, constraints, and scope. The actuary need not be familiar with every aspect of potential unpaid claims.

Examples of aspects of the unpaid claims (including any material trends and issues associated with such elements) that may require an understanding include the following:

- a. coverage;
- b. conditions or circumstances that make a claim more or less likely or the cost more or less severe;
- c. the underlying claim adjustment process; and
- d. potential recoverables.

3.6 Unpaid Claim Estimate Analysis—The actuary should consider factors associated with the unpaid claim estimate analysis that, in the actuary’s professional judgment, are material and are reasonably foreseeable to the actuary at the time of estimation. The actuary is not expected to become an expert in every aspect of potential unpaid claims.

The actuary should consider the following items when performing the unpaid claim estimate analysis:

3.6.1 Methods and Models—The actuary should consider methods or models for estimating unpaid claims that, in the actuary’s professional judgment, are appropriate. The actuary should select specific methods or models, modify such methods or models, or develop new methods or models based on relevant factors including, but not limited to, the following:

- a. the nature of the claims and underlying exposures;
- b. the development characteristics associated with these claims;
- c. the characteristics of the available data;
- d. the applicability of various methods or models to the available data; and
- e. the reasonableness of the assumptions underlying each method or model.

The actuary should consider whether a particular method or model is appropriate in light of the purpose, constraints, and scope of the assignment. For example, an

unpaid claim estimate produced by a simple methodology may be appropriate for an immediate internal use. The same methodology may be inappropriate for external financial reporting purposes.

The actuary should consider whether, in the actuary's professional judgment, different methods or models should be used for different components of the unpaid claim estimate. For example, different coverages within a line of business may require different methods.

The actuary should consider the use of multiple methods or models appropriate to the purpose, nature and scope of the assignment and the characteristics of the claims unless, in the actuary's professional judgment, reliance upon a single method or model is reasonable given the circumstances. If for any material component of the unpaid claim estimate the actuary does not use multiple methods or models, the actuary should disclose and discuss the rationale for this decision in the actuarial communication.

In the case when the unpaid claim estimate is an update to a previous estimate, the actuary may choose to use the same methods or models as were used in the prior unpaid claim estimate analysis, different methods or models, or a combination of both. The actuary should consider the appropriateness of the chosen methods or models, even when the decision is made not to change from the previously applied methods or models.

3.6.2 Assumptions—The actuary should consider the reasonableness of the assumptions underlying each method or model used. Assumptions generally involve significant professional judgment as to the appropriateness of the methods and models used and the parameters underlying the application of such methods and models. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends. The actuary should use assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent. Note that bias with regard to an expected value estimate would not necessarily be bias with regard to a measure intended to be higher or lower than an expected value estimate.

The actuary should consider the sensitivity of the unpaid claim estimates to reasonable alternative assumptions. When the actuary determines that the use of reasonable alternative assumptions would have a material effect on the unpaid claim estimates, the actuary should notify the principal and attempt to discuss the anticipated effect of this sensitivity on the analysis with the principal.

When the principal is interested in the value of an unpaid claim estimate under a particular set of assumptions different from the actuary's assumptions, the actuary may provide the principal with the results based on such assumptions, subject to appropriate disclosure.

- 3.6.3 Data—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to the selection of data to be used, relying on data supplied by others, reviewing data, and using data.
- 3.6.4 Recoverables—Where the unpaid claim estimate analysis encompasses multiple types of recoverables, the actuary should consider interaction among the different types of recoverables and should adjust the analysis to reflect that interaction in a manner that the actuary deems appropriate.
- 3.6.5 Gross vs. Net—The scope of the unpaid claim estimate analysis may require estimates both gross and net of recoverables. Gross and net estimates may be viewed as having three components, which are the gross estimate, the estimated recoverables, and the net estimate. The actuary should consider the particular facts and circumstances of the assignment when choosing which components to estimate.
- 3.6.6 External Conditions—Claim obligations are influenced by external conditions, such as potential economic changes, regulatory actions, judicial decisions, or political or social forces. The actuary should consider relevant external conditions that are generally known by qualified actuaries in the same practice area and that, in the actuary’s professional judgment, are likely to have a material effect on the actuary’s unpaid claim estimate analysis. However, the actuary is not required to have detailed knowledge of or consider all possible external conditions that may affect the future claim payments.
- 3.6.7 Changing Conditions—The actuary should consider whether there have been significant changes in conditions, particularly with regard to claims, losses, or exposures, that are likely to be insufficiently reflected in the experience data or in the assumptions used to estimate the unpaid claims. Examples include reinsurance program changes and changes in the practices used by the entity’s claims personnel to the extent such changes are likely to have a material effect on the results of the actuary’s unpaid claim estimate analysis. Changing conditions can arise from circumstances particular to the entity or from external factors affecting others within an industry. When determining whether there have been known, significant changes in conditions, the actuary should consider obtaining supporting information from the principal or the principal’s duly authorized representative and may rely upon their representations unless, in the actuary’s professional judgment, they appear to be unreasonable.
- 3.6.8 Uncertainty—The actuary should consider the uncertainty associated with the unpaid claim estimate analysis. This standard does not require or prohibit the actuary from measuring this uncertainty. The actuary should consider the purpose and use of the unpaid claim estimate in deciding whether or not to measure this uncertainty. When the actuary is measuring uncertainty, the actuary should consider the types and sources of uncertainty being measured and choose the methods, models, and

assumptions that are appropriate for the measurement of such uncertainty. For example, when measuring the variability of an unpaid claim estimate covering multiple components, consideration should be given to whether the components are independent of each other or whether they are correlated. Such types and sources of uncertainty surrounding unpaid claim estimates may include uncertainty due to model risk, parameter risk, and process risk.

- 3.7 **Unpaid Claim Estimate**—The actuary should take into account the following with respect to the unpaid claim estimate:
- 3.7.1 **Reasonableness**—The actuary should assess the reasonableness of the unpaid claim estimate, using appropriate indicators or tests that, in the actuary’s professional judgment, provide a validation that the unpaid claim estimate is reasonable. The reasonableness of an unpaid claim estimate should be determined based on facts known to, and circumstances known to or reasonably foreseeable by, the actuary at the time of estimation.
- 3.7.2 **Multiple Components**—When the actuary’s unpaid claim estimate comprises multiple components, the actuary should consider whether, in the actuary’s professional judgment, the estimates of the multiple components are reasonably consistent.
- 3.7.3 **Presentation**—The actuary may present the unpaid claim estimate in a variety of ways, such as a point estimate, a range of estimates, a point estimate with a margin for adverse deviation, or a probability distribution of the unpaid claim amount. The actuary should consider the intended purpose or use of the unpaid claim estimate when deciding how to present the unpaid claim estimate.
- 3.8 **Documentation**—The actuary should consider the intended purpose or use of the unpaid claim estimate when documenting work, and should refer to ASOP No. 41, *Actuarial Communications*.

Section 4. Communications and Disclosures

4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the unpaid claim estimate and refer to ASOP Nos. 23 and 41.

In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

- a. the intended purpose(s) or use(s) of the unpaid claim estimate, including adjustments that the actuary considered appropriate in order to produce a single work product for multiple purposes or uses, if any, as described in section 3.1;
- b. significant limitations, if any, which constrained the actuary’s unpaid claim estimate analysis such that, in the actuary’s professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result, as described in section 3.2;
- c. the scope of the unpaid claim estimate, as described in section 3.3;
- d. the following dates: (1) the accounting date of the unpaid claim estimate, which is the date used to separate paid versus unpaid claim amounts; (2) the valuation date of the unpaid claim estimate, which is the date through which transactions are included in the data used in the unpaid claim estimate analysis; and (3) the review date of the unpaid claim estimate, which is the cutoff date for including information known to the actuary in the unpaid claim estimate analysis, if appropriate. An example of such communication is as follows: “This unpaid claim estimate as of December 31, 2005 was based on data evaluated as of November 30, 2005 and additional information provided to me through January 17, 2006.”;
- e. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the unpaid claim estimate;
- f. significant events, assumptions, or reliances, if any, underlying the unpaid claim estimate that, in the actuary’s professional judgment, have a material effect on the unpaid claim estimate, including assumptions provided by the actuary’s principal or an outside party or assumptions regarding the accounting basis or application of an accounting rule. If the actuary depends upon a material assumption, method, or model that the actuary does not believe is reasonable or cannot determine to be reasonable, the actuary should disclose the dependency of the estimate on that assumption/method/model and the source of that assumption/method/model. The actuary should use professional judgment to determine whether further disclosure would be appropriate in light of the purpose of the assignment and the intended users

- of the actuarial communication;
- g. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - h. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - i. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.2 Additional Disclosures—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:
- a. In the case when the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided, for example, a range of estimates of the intended measure (each of such estimates considered to be a reasonable estimate on a stand-alone basis); a range representing a confidence interval within the range of outcomes produced by a particular model or models; or a range representing a confidence interval reflecting certain risks, such as process risk and parameter risk.
 - b. In the case when the unpaid claim estimate is an update of a previous estimate, the actuary should disclose changes in assumptions, procedures, methods or models that the actuary believes to have a material impact on the unpaid claim estimate and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

This standard defines issues and considerations that an actuary should take into account when estimating unpaid claim and claim adjustment expense for property and casualty coverages or hazard risks. The *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* was adopted by the Board of Directors of the Casualty Actuarial Society in May 1988. The *Statement of Principles* has served as the primary guidance regarding estimation of unpaid property and casualty claim and claim adjustment expense amounts providing both principles and considerations related to practice. In conjunction with the development of this standard, the *Statement of Principles* is undergoing revision to focus on principles rather than also discussing considerations.

A decision was made to exclude unpaid claim estimates developed for ratemaking purposes from the scope of this standard. This was done to avoid placing inappropriate requirements on unpaid claim estimates in the ratemaking context, and to keep the scope workable by excluding additional considerations only applicable to the ratemaking context. Ratemaking requires more of a hypothetical analysis of possible future events than an analysis of the cost of past events. Hence, the selection and evaluation of assumptions and methods for ratemaking purposes may be different from the selection and evaluation of such for past event unpaid claim estimates.

Current Practices

Actuaries are guided by the *Statement of Principles Regarding Property and Liability Loss and Loss Adjustment Expense Reserves* of the Casualty Actuarial Society. Other ASOPs issued by the Actuarial Standards Board pertaining to claim and claim adjustment expense estimates have included ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*; ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 23, *Data Quality*; ASOP No. 36, *Statement of Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, and ASOP No. 41, *Actuarial Communications*. In addition, since 1993, the Casualty Practice Council of American Academy of Actuaries has published practice notes addressing current National Association of Insurance Commissioners' requirements for the statement of actuarial opinion. The practice notes describe some current practices and show illustrative wording for handling issues and problems. While these practice notes (and future practice notes issued after the effective date of this standard) can be updated to react in a timely manner to new concerns or requirements, they are not binding, and they have not gone through the exposure and adoption process of the standards of actuarial practice promulgated by the Actuarial Standards

Board.

There are also numerous educational papers in the public domain relevant to the topic of unpaid claim estimates, including those published by the Casualty Actuarial Society. Some of these are refereed and others are not. While these may provide useful educational guidance to practicing actuaries, none is an actuarial standard.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Property/Casualty Unpaid Claim Estimates*, was issued in February 2007 with a comment deadline of May 1, 2007. Nine comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Subcommittee on Reserving carefully considered all comments received and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 4 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	Two commentators requested that the standard comment on what would constitute reasonable review of a previous estimate. Specifically, they were concerned with actuaries reviewing an earlier estimate with the benefit of hindsight, particularly in a litigation situation.
Response	A sentence has been added to section 3.7.1, Reasonableness, to address this issue.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested a clarification to section 1.2, inserting the words “or will have occurred” immediately after the words “for events that have already occurred.”
Response	The reviewers agree and made the change.
Comment	One commentator was concerned that the development of unpaid claim estimates for ratemaking purposes would benefit from much of what is in this standard, despite the ratemaking scope exclusion in this standard. The recommendation was to retain the ratemaking exclusion in this standard but to then begin work on a revision that would remove such an exclusion.
Response	The reviewers agree with retaining the ratemaking scope exclusion for this standard but believe the ratemaking situation is outside their current charge.

Comment	One commentator suggested adding the words “specific types of” before the word “recoverables” in the first paragraph of section 1.2, as otherwise it might imply that all types of recoverables are being discussed.
Response	The reviewers disagree with the suggestion, as the intent is to potentially include all types of recoverables related to unpaid claims, relying on the actuary in section 3.3, Scope of the Unpaid Claim Estimate, to identify the particular recoverables (if any) applicable to the given purpose or use of the unpaid claim estimate(s) being developed. The reviewers made no change.
Comment	Two commentators were concerned that some may be confused by the use of the term “unpaid claim estimates” rather than “reserves.”
Response	The reviewers added a paragraph to section 1.2 for clarity.
Comment	One commentator was concerned that the scope exclusion for items that “may be a function of unpaid claim estimates” would inadvertently exclude recoverables that are included in unpaid claims.
Response	The reviewers believe that the standard is sufficiently clear (as reflected in the first paragraph, last sentence of section 1.2) that such recoverables are covered by the standard.
Comment	One commentator suggested adding “pricing” and “premiums” to the list of items that are a function of unpaid claim estimates or claim outcomes but not included in this standard’s scope.
Response	The reviewers do not feel this is necessary, as ratemaking is already excluded in the section’s first paragraph, and this list is not meant to be all inclusive.
Comment	Two commentators expressed concern that health insurance written by companies filing property/casualty annual statements may be included in the scope. One of these commentators recommended addressing this by explicitly excluding health insurance from the scope. The other commentator recommended that there was no need for a separate property casualty standard on unpaid claim estimates, as the property/casualty perspective could probably be addressed in the current ASOP No. 5, <i>Incurred Health and Disability Claims</i> . The latter commentator also suggested a definition of “property/casualty” be provided if a separate property/casualty standard was to be adopted.
Response	The reviewers agree that such confusion may exist, and added a paragraph to section 1.2, Scope.
Comment	One commentator stated the end of section 1.2 dealing with conflict with applicable law, etc. is not necessary, and that the term “provision” (found in section 1.3, Cross References) is also used in some jurisdictions in place of policy or loss reserves.
Response	The reviewers disagree as this wording is standard for all ASOPs and made no change.

SECTION 2. DEFINITIONS	
Section 2.1, Actuarial Central Estimate	
Comment	One commentator objected to the term “actuarial central estimate,” due to the concern that it would be a truncated mean in most situations, biased low relative to the expected value, and recommended that if absolutely needed in the standard that it be relabeled without the word “actuarial” as part of the label.
Response	The reviewers disagree with the deletion of the term “actuarial” and made no change. Refer to appendix 3.
Comment	One commentator was concerned that the use of the term “expected value” in the definition of “actuarial central estimate” would imply a statistical mean. The commentator suggested changing “expected value” to “central tendency...such as an average or an expected value.”
Response	The reviewers considered similar wording in the drafting process and made no change. Refer to appendix 3.
Comment	One commentator suggested that different terms be used to describe the results from methods vs. models. Specifically, the commentator suggested the term “actuarial central estimate” be limited to describing a result from a method, while the term “actuarial distribution estimate” or some other term be used to describe the results of a model.
Response	The reviewers believe the standard allows the actuary to describe the results using whatever term the actuary sees fit to use (the term “actuarial central estimate” is provided as just one of many possible terms that can be used) and made no change.
Section 2.3, Coverage	
Comment	One commentator was concerned that the definition of “coverage” did not include self-insured first party claims.
Response	The reviewers could not envision a situation where a “liability” or claim would exist with regard to first party self-insured losses. Rather, this was viewed as more of a reduction in asset value. As such, the reviewers did not agree with the need to address self-insured first party claims and made no change.
Section 2.5, Method and 2.6, Model	
Comment	One commentator stated, “There are definite differences between ‘methods’ and ‘models’ that are much more substantial and fundamental than” what is in the proposed standard. The commentator suggested that more complete definitions be taken from the CAS Working Party paper on reserve variability.
Response	The definitions in the standard are abbreviated versions of what is in the referenced Working Party paper. The reviewers believe that further elaboration is unnecessary, although reference to various CAS publications has been added to appendix 1.
Section 2.7, Model Risk	
Comment	One commentator believed that combining reference to methods and models in the definition of “model risk” in section 2.7 caused grammatical problems. The suggested fix was to create a new term, “method risk,” which would also lead to a slight change in paragraph 3.6.8, Uncertainty.
Response	The reviewers believe that common usage is to include what was described as “method risk” in the category of “model risk.” Hence, a change was made to the definition, but a separate term (and definition) for “method risk” was not added.

Section 2.8, Parameter Risk	
Comment	One commentator objected to the reference to “methods” in the definition of “parameter” risk, due to a belief that “since a ‘method’ does not have an underlying distribution there are no parameters to estimate.”
Response	The reviewers believe that this is within the purview of common usage of the terms “methods” and “parameters,” and made no change.
Comment	One commentator suggested adding a definition of “parameter” for consistency purposes.
Response	The reviewers believe that such a definition is unnecessary and made no change.
Section 2.11, Unpaid Claim Estimates	
Comment	One commentator suggested modifying this definition (and the unpaid claim estimate analysis definition) to clarify that unpaid claim estimates are synonymous with loss reserve estimates or unpaid claim liability estimates in financial reporting contexts.
Response	The reviewers added language to section 1.2, Scope, for clarity.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Purpose or Use of the Unpaid Claim Estimate	
Comment	One commentator agreed with the use of the term “unpaid claim estimate” rather than “reserve” to avoid the financial reporting context, but believed that reference to the “intended purpose” of the estimate forced the discussion back solely to reserves and financial reporting. The suggested fix was to remove any discussion of “intended purpose” in the standard, and focus solely on estimating the distribution of possible future outcomes in the standard. (This concern also led to minor changes suggested in section 1.2, Scope.)
Response	The reviewers disagree that the only “intended purposes” would be those relating to financial reporting. Other “intended purposes” (some of which are listed in section 3.1) include merger/acquisition-related valuations, scenario analyses for risk management purposes, valuations as part of commutation discussions, etc. The reviewers made no change.
Comment	The last sentence of this section states “the actuary...should consider adjustments to accommodate the multiple purposes to the extent...it is appropriate and practical” to do so. One commentator asked if the intent was for the actuary to adjust the estimate or to provide different estimates for each purpose/use.
Response	The reviewers discussed different possible approaches to addressing this situation and decided that the standard should be silent on whether to produce multiple estimates, produce a single estimate that attempts to accommodate both purposes (assuming that this is possible), or some other option. Instead, the standard requires the actuary to consider some adjustment and leaves it up to the actuary’s professional judgment as to whether or what kind of adjustment to make. The reviewers made no change.

Section 3.2, Constraints on the Unpaid Claim Estimate Analysis	
Comment	One commentator suggested replacing “staff” with “resources” in this section as to be more general.
Response	The reviewers agree and changed the language.
Comment	One commentator suggested replacing “result” with “estimate” in this section so that it is more consistent with the rest of the ASOP.
Response	The reviewers disagree. As worded, “result” could incorporate other parts of the analysis beyond the estimate, such as analysis of uncertainty (if included in the assignment’s scope). The reviewers made no change.
Comment	Where there is a significant risk of the type described in this section, one commentator recommended that this situation be a required disclosure.
Response	The reviewers disagree noting that required disclosure is already addressed in section 4.1(b) and made no change.
Section 3.3, Scope of the Unpaid Claim Estimate	
Comment	One commentator was concerned that the wording in 3.3(a)(1) may cause actuaries to limit themselves to only the alternatives listed. Alternate wording was suggested.
Response	The reviewers agree and changed the wording in response.
Comment	One commentator suggested an editorial change for section 3.3(c), whereby “is to be considered” would be changed to “is considered.”
Response	The reviewers disagree with the suggestion, as section 3.3 addresses identification of the scope of the work in advance of the actual analysis. Hence, “is to be” is more appropriate than “is” in this context. The reviewers made no change.
Comment	One commentator suggested replacing the phrase “any other items” in section 3.3(f) with “other items” or “any other significant items,” due to a concern that the current wording would be too all inclusive and could result in excessive procedures.
Response	The reviewers disagree, as the reference at the end of the paragraph (“needed to describe the scope sufficiently”) already addresses the stated concern, and made no change.
Comment	One commentator suggested replacing “material to the actuary” with “material to the estimate” in section 3.5, Nature of Unpaid Claims, first paragraph.
Response	The reviewers agree and made the change.
Section 3.6, Unpaid Claim Estimate Analysis	
Comment	One commentator was concerned with the possible ambiguity with the term “factors” in this paragraph.
Response	The reviewers believe that this possible ambiguity is sufficiently addressed by the discussion in section 3.6.

Comment	One commentator suggested that additional guidance on unpaid claim adjustment expenses be provided for situations involving prepaid expenses and third party administrators (TPAs).
Response	The standard already includes claim adjustment expenses in its scope, as “unpaid claims” is defined in section 1.1, Purpose, as including the related claim adjustment expenses. The reviewers also believe that prepayments to TPAs for the expense of adjusting claims is a specific situation and, as such, is too detailed for the general guidance in this standard. The reviewers made no change.
Section 3.6.1, Methods and Models	
Comment	One commentator stated that “we should be doing all we can to foster the rigorous use of stochastic models in favor of traditional deterministic methods” and objected to the use of “methods” and “models” as essentially interchangeable terms.
Response	The reviewers consider judgment to be a major component of the application of both methods and models. As such, the reviewers do not consider one to be clearly superior to the other in all situations. The reviewers made no change.
Comment	In section 3.6.1, in the phrase that says, “For example, different coverages within a line of business may require different methods,” one commentator questioned whether the word “require” was appropriate.
Response	The reviewers believe that the word “require” is appropriate in this context, given that it is used in the context of an example and not in providing a direct requirement. The reviewers made no change.
Comment	One commentator suggested wording with regard to required disclosure if multiple methods were not used for “any component.” The suggestion limited the disclosure to only material components. The same commentator also asked for clarification of the term “component.”
Response	The reviewers reworded the section to clarify that the requirement only existed for material components. The suggested clarification of the term “component” was not adopted, as the reviewers felt that it would lead to a list of component examples that would never be complete for all applications.
Section 3.6.3, Data	
Comment	One commentator suggested adding guidance that “additional liabilities may be necessary if the data does not balance to recorded claim expenses, i.e., if there is a timing difference between when a claim is shown as paid in the actuarial data and when it is recorded by the principal.”
Response	The reviewers believe that this is a specific situation and is covered by the general guidance in section 3.6.1(c). The reviewers made no change.
Section 3.6.6, External Conditions	
Comment	One commentator suggested that section 3.6.6, External Conditions, focused on past or current conditions, while section 3.6.7, Changing Conditions, focused on current or future conditions, and that these time horizons might be clarified in the standard.
Response	The reviewers do not agree that the time horizons in the two sections are constrained as suggested by the commentator and made no change.

Section 3.6.7, Changing Conditions	
Comment	Two commentators suggested that the actuary should be required to evaluate the reasonableness of management's representations (as referred to in section 3.6.7) under certain circumstances. One of these commentators stated the reference to "reasonable representations" in section 3.6.7 already implies the actuary is required to perform such an evaluation but suggested the standard state this requirement explicitly.
Response	The reviewers disagreed that the standard should require an actuary to perform an evaluation affirming the reasonableness of management's representations and have revised the language to indicate the actuary may rely upon their representations unless, in the actuary's professional judgment, they appear to be unreasonable.
Section 3.6.8, Uncertainty	
Comment	One commentator suggested that examples of uncertainty measures be provided.
Response	The reviewers did not believe that such a list was necessary and made no change.
Comment	One commentator suggested that the original reference to the covariance of multiple component's estimates implied particular statistical tests or relationships that may not be amenable to testing. Replacement wording was suggested.
Response	The reviewers acknowledge the concern and developed new wording that addressed the concern expressed.
Comment	One commentator stated that since the concept of a risk margin is implied by this section, this section should discuss risk margins explicitly.
Response	The reviewers disagree that discussion of uncertainty requires discussion of a risk margin and made no change.
Section 3.7.1, Reasonableness	
Comment	One commentator asked if the actuary should also be assessing the reasonableness of the estimate relative to its intended purpose.
Response	The reviewers believe that the required disclosures in section 4.1, <i>Actuarial Communications</i> , and ASOP No. 41, <i>Actuarial Communications</i> , sufficiently address the commentator's concerns and made no change.

Section 3.7.2, Multiple Components	
Comment	One commentator stated, “I am not certain how ‘estimates of the multiple components’ can be consistent. I can see how the assumptions used can be consistent, the methods can be consistent, or they can be consistently developed.” As a result, the commentator suggested that this section be clarified.
Response	The reviewers believe that the correct focus is on consistency of the estimates of the multiple components as stated. It is not always apparent whether or not the assumptions and/or models/methods underlying the estimates are consistent until the results of those assumptions/models/methods are evaluated. For example, an estimate of gross claim liabilities and a separate estimate of net claim liabilities may each seem to be reasonable when evaluated individually based on the underlying assumptions/models/methods used in their estimation, but the resulting relationship between gross and net estimates may be found to be unreasonable, indicating that the estimates were not reasonably consistent. The reviewers made no change.
Section 3.7.3, Presentation	
Comment	One commentator recommended that the standard require that the methods and/or models be appropriate to the intended purpose of the estimate, and that this is more important than requiring such of the estimate presentation.
Response	The wording in section 3.6.1, Methods and Models, already addresses this issue and no change was made.
Section 4. Communications and Disclosures	
Section 4.1, Actuarial Communications	
Comment	One commentator noted that the definition of “valuation date” found in section 4.1(d) differed from that found in ASOP No. 41, <i>Actuarial Communications</i> , “the date as of which the liabilities are determined.”
Response	The reviewers believe that the definition in section 4.1(d) of this standard conforms with standard usage of the term among casualty actuaries and made no change.
Comment	One commentator suggested further elaborating on this disclosure requirement by requiring “specific comments regarding the major factors or particular conditions applicable to the unpaid claim estimate.” Otherwise, the commentator was concerned that this would result in too many boilerplate disclosures about the risk.
Response	The reviewers acknowledge the concern and addressed it by adding the word “specific” before “significant” in section 4.1(e).
Section 4.2, Additional Disclosures	
Comment	Where the unpaid claim estimate is an update of a previous estimate, one commentator suggested requiring that the amount of change in estimate be disclosed, with reasons provided whenever the change was significant and the reasons for the change were known.
Response	The reviewers did not agree and made no change.

Appendix	
Appendix 1—Background	
Comment	One commentator suggested a change to appendix 1 regarding the proposed revision to the CAS <i>Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves</i> . The commentator recommended that the wording be changed from “focus more narrowly on principles” to “focus more broadly on principles.”
Response	The reviewers disagree, as the proposed revision would remove various sections in the current Principles statement, including extensive discussion on Considerations, and made no change.

Appendix 3

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Comments on “Actuarial Central Estimate”

During this standard’s development, the “actuarial central estimate” concept and definition elicited the most comments of any of the topics covered. The subcommittee believes that the issues raised by this topic are worthy of expanded discussion. The following is meant to provide additional clarity to these key concepts.

This appendix is organized by first providing a background as to the originally proposed wording regarding the actuarial central estimate, followed by a summary of comments received on the actuarial central estimate proposal and subcommittee responses.

Background

The term “actuarial central estimate” was originally created by the subcommittee due to a desire to have a “default” intended measure for the unpaid claim estimate.

The standard requires that the actuary identify (and disclose) the intended measure. The subcommittee had debated whether or not to require disclosure of the estimate’s intended measure in all cases, or to allow for a default intended measure.¹ If a default did exist, the subcommittee felt that it needed to allow for many of the traditional actuarial estimation methods. But many traditional actuarial methods do not explicitly define the intended measure that results from their application. Implicitly, they attempt to produce a central estimate² of some sort with regard to the distribution of possible outcomes, but the resulting intended measure does not have a well-defined statistical definition. Hence, if the standard were to include a default intended measure, the subcommittee believed that it would have to create a new term and a corresponding definition.

As to the definition of the term, it is generally agreed that most traditional actuarial methods are meant to produce some measure of central tendency. But what measure? There are several different measures of central tendency, including (for example) mean, median, mode, and truncated mean. The subcommittee believed that “mean” best represented the central tendency measure implicitly underlying most traditional actuarial methods, even if such traditional methods are not statistical in nature. (For further discussion, this will be referred to as a “conceptual mean” rather than a “statistical mean.”)

Next, the subcommittee considered the issue of whether this conceptual mean is intended to

¹ Note that several accounting frameworks use the term “measurement objective” for this concept, rather than “intended measure.”

² Note that “central estimate” does not imply a midpoint. One respondent suggested using the words “medium or intermediate” estimate to avoid any incorrect interpretation that a “central estimate” must be a midpoint.

incorporate the entire range of all possible outcomes. In some lines of business, the subcommittee felt that this would be problematic due to the potential for doomsday and/or systemic shocks in the tail of the distribution. For example, it is doubtful whether any actuarial estimate (stochastic or deterministic) in 1999 considered the liability for Y2K events to the extent they were forecasted at that time. Many of those Y2K-event liability estimates proved to be overly pessimistic, and most financial statement preparers did not incorporate such estimates in their financial statements prior to January 1, 2000. Similarly, estimates of future mass torts that have yet to be identified (for example, “the next asbestos”) are generally viewed as not reliably estimable. Hence, the subcommittee felt that requiring that the entire range of all possible outcomes be considered in the estimation of the mean is unrealistic.

In looking for other approaches for dealing with this situation, the subcommittee looked at developments in other parts of the world. The subcommittee found that the term “central estimate” was being used in various locations to describe the intended measure of traditional methods.³⁴ Initial drafts of this standard also used the same term, but it was eventually decided that the phrase “central estimate” was too generic, with risk of confusion and misinterpretation due to common meanings of the term “central.” The subcommittee felt that a new term needed to be developed that conveyed the same concepts but without the same risk of misinterpretation. This led to the term “Actuarial Central Estimate,” which was designed to be non-generic, and hence capable of being defined solely by this standard.

As a result of the deliberations discussed above, the subcommittee had developed a rudimentary definition (“conceptual mean,” excluding remote or speculative outcomes) and a name for a default intended measure consistent with the desired default. The resulting paragraph in the first exposure draft was as follows:

- 2.1 *Actuarial Central Estimate—An estimate that represents a mean excluding remote or speculative outcomes that, in the actuary’s professional judgment, is neither optimistic nor pessimistic. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This definition is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.*

3 “‘Central Estimate’: an estimate that contains no deliberate or conscious over or under estimation,” from <http://www.actuaries.org.nz/publications/PS4%20General%20Insurance.pdf#search=%22central%20estimate%20actuarial%22>, September 5, 2006

4 As the recently modified AASB1023 now requires companies to disclose the central estimate of their liabilities (that is the 50% PoS or “best estimate” figure). INFORMATION FOR OBSERVERS, IASB Meeting: 19 April 2005, London, Topic: Insurance Contracts - Education session (Agenda item 3)

Comments and Responses

The comments from this standard’s first exposure draft on “actuarial central estimate” and its later usage could generally be grouped into the following five categories:

- Concern with the use of the term “mean” in the “actuarial central estimate” definition, as doing so may imply statistical approaches and distributions regardless of the caveats of such in the proposed definition.
- Concern with the exclusion of “remote or speculative” outcomes in the “actuarial central estimate” definition, as doing so may lead to an estimate biased low (relative to a mean reflecting the entire distribution of possible outcomes).
- Desire for the default to allow for or possibly even promote conservatism.
- Desire that the standard promote statistical techniques.
- Preference for the term “best estimate” over “actuarial central estimate.”

As a result of the comments that were received, the subcommittee decided to eliminate the concept of prescribing a default measure since opinions differed widely on what the default measure ought to be. It was felt that requiring the actuary to identify the intended measure in all circumstances allowed the actuary to describe the intended measure in the actuary’s own words. However, the subcommittee felt that it was important to have terminology for the measure that results from traditional actuarial methods where the actuary is conceptually aiming for a mean estimate. The subcommittee therefore retained the term ”actuarial central estimate,” revised the definition and included it as an example of an intended measure in the non-exhaustive list that was provided in section 3.3(a)(1).

More detailed responses to the comments are shown below:

Comment:

Some commentators objected to the use of the term “mean” in the definition of “actuarial central estimate,” as they believed that it was impossible to use the term without conveying an implied statistical approach.

Response:

The final definition replaced the term “mean” with “expected value.” Additional clarification is provided in 3.3(a)(1), where it states that the “description [of actuarial central estimate] is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.”

Comment:

Some commentators had a concern with the exclusion of “remote or speculative” outcomes in the originally proposed “actuarial central estimate” definition, as they felt that this would lead to estimates that were biased low (relative to a statistical mean reflecting the entire distribution).

Response:

The subcommittee believes that nearly all methods currently in use for estimating unpaid claims, whether stochastic or deterministic, do not reflect all possible outcomes, nor should they necessarily do so. The major concern of the subcommittee in this area are those outcomes where reliable determination of the outcomes’ contribution to a mean estimate are so problematic as to be speculative and which are not expected to be normal or recurring on a regular basis. Examples include the Y2K concerns prior to January 1, 2000, and estimates of future mass torts that have yet to be identified (for example, “the next asbestos”). This concern is also limited to those outcomes that could be material to an expected value estimate.

The exposure draft did not and the final standard does not require exclusion of such outcomes in the determination of the unpaid claim estimate, but the subcommittee believes that the actuary should consider whether truly all possible outcomes are included in the actuary’s unpaid claim estimate (where the intended measure purports to reflect the entire distribution of possible outcomes). With regard to the “actuarial central estimate” definition, the subcommittee has eliminated the terms “speculative” and “remote,” and has replaced them with wording that focused more directly on the concern that reliable estimates of such outcomes cannot be produced.

Comment:

Some commentators were concerned that the “actuarial central estimate” definition precluded the use of conservatism (described in some instances as a margin for adverse deviation) in the unpaid claim estimate intended measure.

Response:

This standard was meant to apply to work done in a variety of situations. In many of those situations, the purpose and/or use of the unpaid claim estimate will dictate whether a margin for adverse deviation is required, allowed or prohibited. The subcommittee does not believe it is the role of the actuary or ASB to dictate a certain singular treatment of margins for adverse deviation for all unpaid claim estimates. In fact, in certain instances the subcommittee believes that the treatment of such in the unpaid claim estimate is clearly not part of the role of the actuary.

The subcommittee also believes that the actuary should clearly disclose the basis of the unpaid claim estimate regarding all the items listed in section 3.3. Hence, in those instances where the unpaid claim estimate includes a margin for adverse deviation, the presence of such margin should be explicitly disclosed.

Comment:

Some of the commentators wanted the standard to advocate only certain techniques for calculating any unpaid claim estimate, regardless of the intended measure. In particular, these comments wanted the standard to dictate the use of stochastic models.

Response:

The subcommittee believes the choice of methodology should be determined by the actuary.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 44**

**Selection and Use of Asset Valuation Methods
for Pension Valuations**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2007
(Clarified September 2009)**

Updated for Deviation Language Effective May 1, 2011

(Doc. No. 160)

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ASOP No. 44—September 2009

September 2009

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection and Use of Asset Valuation Methods for Pension Valuations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 44

This document contains the clarified version of ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

Background

ASOP No. 44 was issued as a new standard in September 2007, with an effective date of March 15, 2008. The ASB recently became aware of a need for clarification of the wording in section 3.4.1, Bias. The intent of the section is to require disclosure of the existence of systematic bias in the asset valuation method only when such bias is, in the actuary's professional judgment, significant. While the first sentence of section 3.4.1 accurately communicates this intent, the second sentence does not, creating some confusion among practitioners. Accordingly, the ASB has clarified the standard by adding the word "significantly" before the word "skewed" in the second sentence of section 3.4.1.

The ASB voted to adopt this clarification on September 21, 2009 effective immediately for reports issued after that date.

ASOP No. 44—September 2009

Actuarial Standards Board

Stephen G. Kellison, Chairperson

Albert J. Beer	Robert G. Meilander
Alan D. Ford	James J. Murphy
Patrick J. Grannan	Godfrey Perrott
Thomas D. Levy	James F. Verlautz

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ASOP No. 44—September 2009

September 2007

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection and Use of Asset Valuation Methods for Pension Valuations

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 44

This document contains the final version of ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

Background

Pension Plan Recommendations A, B, and C were adopted and amended by the American Academy of Actuaries (Academy) during the period 1976 to 1983. In 1988, *Recommendations for Measuring Pension Obligations* was promulgated as an ASOP by the Interim Actuarial Standards Board and the Board of Directors of the American Academy of Actuaries. In 1990, the ASB republished that standard as ASOP No. 4, *Recommendations for Measuring Pension Obligations*. In October 1993, ASOP No. 4 was reformatted and published in the uniform format adopted by the ASB, with a title change, *Measuring Pension Obligations*.

The selection of economic and noneconomic assumptions, the actuarial cost method, and the asset valuation method are all key elements in the valuation of pension obligations. The evolution of actuarial practice made it necessary to update the guidance in these areas. The following provide such guidance:

1. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;
2. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;
3. This ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*; and
4. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, which ties together the other three standards, provides guidance on actuarial cost methods, and addresses overall considerations for measuring pension obligations and determining plan costs or contributions.

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The comment letters on the exposure drafts of this ASOP led the Pension Committee to conclude that both the use of market value and the use of a variety of asset valuation methods other than market value are generally accepted actuarial practices. In recognition of the many circumstances in which the actuary does not select the asset valuation method and the many different asset valuation methods that are in widespread use, this ASOP provides guidance in selecting appropriate methods and, in some instances, requires disclosure of characteristics of the asset valuation method, regardless of who selected it.

The ASOP also separates considerations relevant to the choice of any asset valuation method, including market value, from those considerations that are relevant only to asset valuation methods other than market value.

This ASOP is intended to accommodate the concepts of financial economics as well as traditional actuarial practice.

First Exposure Draft

The first exposure draft of this ASOP, then titled *Selection of Asset Valuations for Pension Valuations*, was issued in December 2001, with a comment deadline of May 15, 2002. Thirty-four comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was issued in October 2003 with a comment deadline of April 30, 2004. Fifteen comment letters were received and considered in developing modifications that were reflected in the third exposure draft.

Third Exposure Draft

The third exposure draft of this ASOP was issued in September 2005 with a comment deadline of February 28, 2006. Five comment letters were received and considered in developing modifications that were reflected in the fourth exposure draft.

Fourth Exposure Draft

The fourth exposure draft of this ASOP was issued in August 2006 with a comment deadline of March 1, 2007. The Pension Committee carefully considered the five comment letters received. The key changes made to the final standard in response to these comment letters are as follows:

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1. Section 3.4.1(b), Bias, which addressed possible bias in the *de facto* asset valuation method associated with changes in the asset valuation method, was removed. Instead, section 4.1.3, Changes in Asset Valuation Method, was expanded to require the actuary to disclose the reasons for any changes in asset valuation method.
2. Section 4.1.5, Bias, was revised to provide an example of a disclosure that describes significant systematic bias as a characteristic of an asset valuation method without using the word “bias.”

In addition, a number of clarifying changes were made to the text. Please see appendix 2 for a detailed discussion of the comments received and the reviewers’ responses.

Note that the section on Prescribed Statement of Actuarial Opinion (formerly section 4.3) has been deleted due to the amended *Qualifications Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* promulgated by the American Academy of Actuaries.

The Pension Committee thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The Pension Committee thanks former committee members Thomas P. Adams, Arthur J. Assantes, Lawrence Deutsch, David L. Driscoll, Bruce C. Gaffney, Lawrence A. Golden, Marilyn F. Janzen, Daniel G. Laline Jr., John F. Langhans, Michael B. Preston, William A. Reimert, Phillip A. Romello, Joan M. Weiss, and Ruth F. Williams for their assistance with drafting this ASOP.

The ASB voted in September 2007 to adopt this standard.

Pension Committee of the ASB

David R. Fleiss, Chairperson	
Mita D. Drazilov	A. Donald Morgan
David P. Friedlander	Timothy A. Ryor
Peter H. Gutman	Frank Todisco

Actuarial Standards Board

Cecil D. Bykerk, Chairperson	
Albert J. Beer	Robert G. Meilander
William C. Cutlip	Godfrey Perrott
Alan D. Ford	Lawrence J. Sher
David R. Kass	Karen F. Terry

ASOP No. 44—September 2009

ACTUARIAL STANDARD OF PRACTICE NO. 44

**SELECTION AND USE OF ASSET VALUATION METHODS
FOR PENSION VALUATIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to the actuary when performing professional services with respect to the following:
- a. selection of an asset valuation method for purposes of a defined benefit pension plan actuarial valuation; and
 - b. appropriate disclosures regarding the asset valuation method used.
- 1.2 **Scope**—This standard applies to the actuary when performing professional services with respect to selecting or using an asset valuation method for any defined benefit pension plan that is not a social insurance program as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless an ASOP on social insurance explicitly calls for application of this standard). Throughout this standard, any reference to selecting an asset valuation method also includes giving advice on selecting an asset valuation method. For instance, the actuary may advise the plan sponsor on selecting an asset valuation method, where the plan sponsor is responsible for selecting the method.

To the extent that the guidance in this standard may conflict with ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, ASOP No.4 will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial valuation with a

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measurement date on or after March 15, 2008.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Valuation**—The measurement of relevant pension obligations and, when applicable, the determination of the actuarial value of assets, periodic costs, or contributions.
- 2.2 **Actuarial Value of Assets**—The value of pension plan investments and other property, used by the actuary for the purpose of an actuarial valuation (sometimes referred to as *valuation assets* or *market-related value of assets*).
- 2.3 **Asset Valuation Method**—A method used by the actuary to determine the actuarial value of assets.
- 2.4 **Market Value**—The price that would be received to sell an asset in an orderly transaction between market participants at the measurement date (sometimes referred to as *fair value*).
- 2.5 **Measurement Date**—The date as of which the actuarial value of assets is determined (sometimes referred to as the *valuation date*).
- 2.6 **Prescribed Asset Valuation Method**—A specific asset valuation method that is mandated by law, regulation, or other binding authority. For purposes of this standard, the plan sponsor would be considered a binding authority to the extent that law, regulation, or accounting standards give the plan sponsor responsibility for selecting such an asset valuation method.
- 2.7 **Principal**—A client or employer of the actuary.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—The measurement of a pension plan’s assets and the relationship between the plan’s assets and its obligations are integral to the valuation process. The asset valuation method potentially affects the timing and amount of future plan costs or contributions and the plan’s ability to satisfy its benefit obligations. Consequently, the actuary should use professional judgment when selecting an asset valuation method.
- 3.2 **Considerations in Selecting a Method**—The actuary should consider the following factors when selecting an asset valuation method:

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- 3.2.1 **Purpose and Nature of the Measurement**—The actuary should consider the purpose and nature of the measurement when selecting an asset valuation method. It may be appropriate for the actuary to select different methods for different purposes. For example, for purposes of determining contributions to an ongoing plan, the actuary may consider selecting an asset valuation method that smoothes the effects of volatility in market value on the pattern of contributions. As a second example, for measurements in conjunction with a plan termination, the actuary should consider selecting an asset valuation method that produces an actuarial value of assets that represents the value of assets expected to be available for distribution (i.e., net of any significant liquidation or surrender charges reasonably expected to be incurred).
- 3.2.2 **Objectives of the Principal**—The actuary should consider the objectives of the principal to the extent such objectives have been communicated to the actuary, are relevant to, and not inconsistent with, the purpose of the measurement, and are consistent with the actuary's responsibilities under the *Code of Professional Conduct*. For example, when the principal is a plan sponsor and the purpose of the measurement is to determine annual contributions, the actuary should consider plan sponsor objectives such as a desire for stable or predictable costs or contributions, or a desire to achieve a target funding level within a specified time frame.
- 3.2.3 **Multiple Asset Valuation Methods**—The actuary may select different asset valuation methods for different classes of assets. For example, the actuary may determine that it is appropriate to use a smoothing method for equity investments and market value for fixed income investments.
- 3.2.4 **Adjustment of Asset Values for Timing Differences**—Sometimes asset values as of the measurement date are not available. In these situations, the actuary should select an asset valuation method that adjusts the value of the assets for the time between the date as of which asset values are available and the measurement date. Such an asset valuation method may reference appropriate published asset indices or involve an adjustment using another reasonable method.
- 3.2.5 **Use of Actuarial Assumptions**—To the extent that actuarial assumptions are used as part of an asset valuation method, the actuary should be guided by ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, and No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, in selecting those assumptions. Furthermore, the assumptions should be consistent with the other assumptions used in the actuarial valuation.

It may be appropriate for the actuary to select different assumptions for different

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purposes. For example, the actuary may project asset values for a few months using an assumption that differs from a long-term expected return assumption.

3.2.6 Additional Considerations—When selecting an asset valuation method, the actuary should consider other known, relevant factors such as the following:

- a. the plan's investment policy and actual investment practices;
- b. the characteristics of the asset classes in which the plan is invested (for example, the volatility of the return of each asset class and the correlation of the return with changes in the value of plan obligations);
- c. the plan's expected future cash flows and liquidity needs;
- d. the period of time over which the plan's assets are expected to be held; and
- e. the characteristics of the method used to measure the pension obligation (for example, whether the pension obligation is measured on a mark-to-market basis).

3.3 Selecting Methods Other Than Market Value—If the considerations in section 3.2 have led the actuary to conclude that an asset valuation method other than market value may be appropriate, the actuary should select an asset valuation method that is designed to produce actuarial values of assets that bear a reasonable relationship to the corresponding market values. The qualities of such an asset valuation method include the following:

- a. The asset valuation method is likely to produce actuarial values of assets that are sometimes greater than and sometimes less than the corresponding market values.
- b. The asset valuation method is likely to produce actuarial values of assets that, in the actuary's professional judgment, satisfy both of the following:
 1. The asset values fall within a reasonable range around the corresponding market values. For example, there might be a corridor centered at market value, outside of which the actuarial value of assets may not fall, in order to assure that the difference from market value is not greater than the actuary deems reasonable.
 2. Any differences between the actuarial value of assets and the market value are recognized within a reasonable period of time. For example, the actuary might use a method where the actuarial value of assets converges toward market value at a pace that the actuary deems reasonable, if the investment return assumption is realized in future periods.

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In lieu of satisfying both (1) and (2) above, an asset valuation method could satisfy section 3.3(b) if, in the actuary's professional judgment, the asset valuation method either (i) produces values within a sufficiently narrow range around market value or (ii) recognizes differences from market value in a sufficiently short period.

A plan's investment policy may provide that fixed-income securities are expected to be held to maturity and holding such securities to maturity is not inconsistent with the plan's investment practice and expected cash flow needs. In such situations, an asset valuation method that uses amortized cost for such securities is deemed to bear a reasonable relationship to market value relative to those assets.

3.4 **Using Methods Other Than Market Value**—When using an asset valuation method other than market value, regardless of who selected the method, the actuary should consider the following:

3.4.1 **Bias**—If the asset valuation method has significant systematic bias, the actuary should disclose such bias in accordance with section 4.1. An asset valuation method has significant systematic bias if, in the actuary's professional judgment, the method's design is expected to produce a distribution of actuarial values that is significantly skewed toward understatement or overstatement relative to the corresponding market values.

The following paragraphs are intended to clarify the meaning of bias for purposes of this standard.

- a. An asset valuation method does not have significant systematic bias solely because it has one or both of the following characteristics:
 1. the asset valuation method would produce actuarial values of assets that are consistently less than (or greater than) the corresponding market values during sustained periods of increasing (or decreasing) market values; or
 2. the asset valuation method would produce actuarial values of assets that approach the corresponding market values asymptotically, assuming the investment return assumption is realized in future periods.
- b. Examples of asset valuation methods that have significant systematic bias include the following:
 1. an asset valuation method that is designed to produce a value

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consistently below market value if, in all time periods relevant to the application of the asset valuation method, the actual return on market value of the assets subject to the asset valuation method were equal to the actuary's expected return on those assets (such as a method that immediately recognizes interest and dividends but defers recognition of realized and unrealized capital gains and losses); and

2. an asset valuation method that produces an actuarial value of assets equal to a smoothed value that is subject to an asymmetrical corridor around market value, such as not more than 105% of market value or less than 80% of market value.

3.4.2 Different Treatment of Realized and Unrealized Gains and Losses—If the asset valuation method treats realized gains and losses differently from unrealized gains and losses, the actuary should disclose this difference in accordance with section 4.1. An asset valuation method treats realized gains and losses differently from unrealized gains and losses if it would produce different results depending upon whether an asset is sold or held. When such a method is used, an increase in asset turnover, as might happen if the plan changes investment managers, can cause a significant change in the actuarial value of assets.

Examples of asset valuation methods that treat realized gains and losses differently from unrealized gains and losses include the following:

- a. an asset valuation method that uses the average of book value and market value;
- b. an asset valuation method that immediately recognizes realized gains and losses and gradually recognizes unrealized gains and losses; and
- c. an asset valuation method that uses the product of the book value of assets on the measurement date multiplied by a five-year average of the ratio of market value to book value.

3.5 Assets that are Difficult to Value—Some assets do not have a readily established market value, such as certain insurance contracts, real estate, or other property. In determining the value of such assets, if audited financial statements do not provide an appropriate market value, the actuary may consider appraisals by qualified independent experts, recent sales of similar assets, the present value of reasonably expected future cash flows, or other appropriate methods. The value, so determined, may be treated as market value for purposes of this standard.

3.6 Reviewing the Asset Valuation Method—Once an asset valuation method has been

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selected for a particular purpose, at each subsequent measurement date, the actuary should consider whether the selected asset valuation method continues to be appropriate for that purpose. The actuary is not required to do a complete reassessment at each measurement date. However, if a significant change in the principal's objectives has been communicated to the actuary (see section 3.2.2), the actuary should review the appropriateness of the asset valuation method. Furthermore, if the asset valuation method is other than market value, the actuary should review the appropriateness of the asset valuation method if an event such as the following has occurred:

- a. a significant change in the plan provisions affecting cash flow (such as adding a lump sum payment option, or freezing or terminating the plan), in the actuarial cost method or funding policy, or in participant demographics;
- b. a significant change in the plan's investment policy (such as adding a new asset class or significantly changing the proportion of assets invested in each class);
- c. a prolonged significant deviation from market value; or
- d. changes in relevant law, regulations, or accounting guidance.

3.7 **Level of Refinement**—The actuary should exercise professional judgment in establishing an appropriate balance between refined methodology and materiality. The actuary is not required to use a particular type of valuation method or to select a highly refined method when it is not expected to produce materially different results than would a less refined method. For example, it may be reasonable to assume that benefit payments are evenly distributed throughout the year, rather than reflecting the actual timing of each payment.

3.8 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.9 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41, *Actuarial Communications*. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.1.

Section 4. Communications and Disclosures

4.1 **Disclosures in Actuarial Reports**—When issuing an actuarial report, as defined in ASOP No. 41, the actuary should follow the applicable disclosure requirements in ASOP No. 4, *Measuring Pension Obligations and Determining Plan Costs or Contributions*, and ASOP No. 23. In addition, the actuary should disclose the following:

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- 4.1.1 **Asset Valuation Method**—The actuary should describe each asset valuation method used in the measurement in sufficient detail to permit another actuary qualified in the same practice area to reproduce the calculation if the actuary were provided with the necessary asset data.
- 4.1.2 **Market Value and Actuarial Value of Assets**—The actuary should disclose the market value and actuarial value of assets. If multiple asset valuation methods are used, in accordance with section 3.2.3, the actuary should disclose the market value and actuarial value of the assets subject to each asset valuation method. With respect to assets whose market value is determined under section 3.5, disclosure shall include the amount of such assets and a description of how the value of such assets was determined.
- 4.1.3 **Changes in Asset Valuation Method**—The actuary should describe changes, if any, in the asset valuation method from the method previously used for the same measurement purpose and the reasons for those changes. The actuary should disclose the general effects of any such changes in words or by numerical data, as appropriate.
- 4.1.4 **Bias**—If, in the actuary’s professional judgment, the asset valuation method has significant systematic bias toward understatement or overstatement relative to market value, as described in section 3.4.1, the actuary should disclose the direction of the bias. For example, if the asset valuation method used to determine the plan’s contribution requirements is one of the methods described in section 3.4.1(b), the disclosure might state the following: “A characteristic of this asset valuation method is that, over time, it is more likely to produce an actuarial value of assets that is less than the market value of assets.”
- 4.1.5 **Different Treatment of Realized and Unrealized Gains and Losses**—If the asset valuation method treats realized gains and losses differently from unrealized gains and losses, the actuary should disclose this characteristic and the possible consequences of the use of such an asset valuation method. For example, the disclosure might state the following: “This asset valuation method treats unrealized gains and losses differently from realized gains and losses. Thus, asset turnover can cause a significant change in the actuarial value of assets.”
- 4.1.6 **Additional Disclosures**—The actuary should include the following, as applicable, in an actuarial report:
 - a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority); however, if the assumption or method was passed, adopted, or promulgated by the plan sponsor (or by the same

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governing body that establishes plan benefits or provides for plan funding) then this guidance does not apply and the actuary should follow guidance of paragraph b. below instead:

- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.2 Disclosures in Other Actuarial Communications—The actuary should be guided by ASOP No. 41 when considering which of the disclosures in section 4.1 should be included in an actuarial communication that is not in the form of an actuarial report.

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Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Historically, actuaries have selected various methods to determine the actuarial value of pension plan assets for different measurement purposes.

Current Practices

Actuaries use both market value and asset valuation methods other than market value. The latter asset valuation methods are usually used for smoothing the effects of volatility in market value on plan costs or contributions, or achieving consistency between the valuation of assets and obligations.

An asset valuation method that is intended to smooth the effects of market volatility typically reflects the market value of plan assets in some fashion. This is accomplished through a variety of commonly used techniques, such as the following:

1. smoothing some components of the return on market value or the difference between actual returns on market value and expected returns;
2. requiring that the actuarial value of assets fall within a specified range, such as 80% to 120%, of the market value; or
3. recognizing differences between the actuarial and market values of assets over a specified time schedule.

Actuaries often select different asset valuation methods for different purposes, such as for determining cash contribution requirements, determining employer accounting costs, or assessing the plan's funded status upon plan termination.

Asset valuation methods have been the subject of growing attention, influenced by regulatory trends and consideration of the concepts of financial economics. Actuaries who apply a financial economics approach generally advocate the use of market measurement of assets, while traditional actuarial practice includes both the use of market value and the use of a variety of asset valuation methods other than market value.

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Appendix 2

Comments on the Fourth Exposure Draft and Responses

The fourth exposure draft of this proposed ASOP was issued in August 2006 with a comment deadline of March 1, 2007. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the proposed changes. Summarized below are the significant issues and questions contained in the comment letters and the responses to each. The term “reviewers” includes the Pension Committee and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the fourth exposure draft.

GENERAL COMMENTS	
Comment	Several commentators suggested various editorial changes in addition to those addressed specifically below.
Response	The reviewers implemented such changes if they enhanced clarity and did not alter the intent of the section.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.4, Effective Date	
Comment	One commentator believed the effective date should be extended until regulations concerning asset valuation methods are issued under the Pension Protection Act of 2006.
Response	The reviewers disagree and made no change. Section 1.2 addresses how to reconcile any discrepancies between applicable law and this standard.
SECTION 2. DEFINITIONS	
Section 2.4, Market Value	
Comment	One commentator suggested that the definition be revised to capture the nuance that market value is technically not the price for which an asset might potentially be sold (the “bid price”), but rather the last price for which a security was sold. The commentator recommended that the proposed standard state that the actuary may rely on brokerage statements for market value and is not required to ascertain the difference between bid price, asked price, and last sales price.
Response	The reviewers believe that the current definition, which is based on the definition of “fair value” in Statement of Financial Accounting Standards No. 157, <i>Fair Value Measurements</i> , is appropriate and made no change.

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Section 2.6, Prescribed Asset Valuation Method	
Comment	One commentator recommended that the definition be revised to include asset valuation methods selected by principals other than plan sponsors.
Response	The reviewers note that the definition is intended to be limited to those situations in which the plan sponsor is given responsibility for selecting an asset valuation method by law, regulation, or accounting standards. Thus, an asset valuation method selected by the plan sponsor or other principal in other circumstances – determining the cost of a benefit increase during collective bargaining, for example – would not be considered a prescribed asset valuation method. Hence, the reviewers made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2.6, Additional Considerations	
Comment	One commentator wrote that item (a) could be interpreted to mean that the actuary should not consider a plan's actual investment practices when the plan has a stated investment policy. The commentator suggested that a plan's actual investment practices should always be considered, regardless of whether the plan has a stated investment policy.
Response	The reviewers agree and changed the wording accordingly.
Section 3.3, Relationship to Market Value, and 3.4, Further Considerations for Methods Other Than Market Value (now 3.3, Selecting Methods Other Than Market Value, and 3.4, Using Methods Other Than Market Value)	
Comment	One commentator pointed out that the title of section 3.4, Further Considerations for Methods Other Than Market Value, was misleading because the section required disclosure of characteristics of asset valuations other than market value. The commentator recommended changing the section's title to correspond to the content of the section.
Response	The reviewers agree and renamed sections 3.3 and 3.4 to be consistent with the guidance provided in those sections. In addition, the reviewers clarified that the considerations in section 3.4 are intended to apply to all asset valuation methods other than market value, whether selected by the actuary or selected by others.

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Section 3.4.1, Bias	
Comment	<p>One commentator disagreed with the requirement that the actuary disclose that an asset valuation method has significant systematic bias, believing that a full description of the asset valuation method is sufficient for the user to determine if the method is biased.</p> <p>The commentator also wrote that it is inappropriate for the proposed standard to require the actuary to disclose that a prescribed asset valuation method has bias, as it puts the actuary in a position of evaluating whether a required method has characteristics that could be considered undesirable.</p> <p>Finally, the commentator noted that the word “bias” is often used to describe the introduction of error into a statistical sample, and pointed out that describing an asset valuation method as having “significant systematic error” suggests that the use of that asset valuation method is inappropriate and that the actuary should not perform the assignment.</p> <p>Two commentators supported the requirement that the actuary disclose that an asset valuation method has significant systematic bias.</p>
Response	<p>Regarding the first point, the reviewers do not believe that a full description of a biased asset valuation method is always sufficient for all intended users to recognize that the method has bias. The reviewers revised section 4.1.5 to provide an example of a disclosure that describes significant systematic bias as a characteristic of the asset valuation method without the use of the word “bias.”</p>
Comment	<p>One commentator noted that the appropriate assumption in paragraph (a)(2) is that market values experience <i>expected returns</i> rather than <i>constant returns</i>.</p>
Response	<p>The reviewers agree and made the recommended change. A similar change was made in section 3.3(b)(2).</p>
Comment	<p>Three commentators wrote that paragraph (b) was vague and inappropriate.</p> <p>One commentator pointed out that paragraph (b) could be read to imply that any change in asset valuation method produces systematic bias if the new method results in a greater actuarial value of assets than the old method.</p> <p>One commentator was concerned that paragraph (b) required information about past changes in the asset valuation method that might not be available to the actuary. The commentator recommended that disclosure of significant systematic bias be limited to the future operation of the asset valuation method rather than the application of the asset valuation method in the past.</p> <p>Another commentator pointed out that paragraph (b) could be read to imply that many changes in asset valuation method that are decided upon after the relevant measurement date could have been influenced by market experience subsequent to the measurement date and be deemed biased.</p>
Response	<p>The reviewers agree that paragraph (b) was problematic and deleted it. Instead of considering whether changes in the asset valuation method produce systematic bias, the standard now requires the actuary to disclose the reason for any changes in asset valuation method (section 4.1.3).</p>
Section 3.6, Reviewing the Asset Valuation Method	
Comment	<p>One commentator recommended adding a reference to changes in relevant law, regulations, or accounting guidance.</p>
Response	<p>The reviewers agree and made the change.</p>

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SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1.4. Prescribed Asset Valuation Method	
Comment	One commentator opposed the requirement that the actuary disclose that, in the actuary's professional judgment, an asset valuation method prescribed by the plan sponsor is not reasonable in light of the purpose of the measurement even though a regulator has approved the general use of that asset valuation method.
Response	The reviewers note that the standard requires the actuary to evaluate whether the prescribed asset valuation method selected by the plan sponsor is <i>reasonable for the purpose of the measurement</i> , and did not believe that general approval of an asset valuation method by a regulator indicates that the use of that method is reasonable for every measurement.
Section 4.1.6. Different Treatment of Realized and Unrealized Gains and Losses	
Comment	One commentator suggested that this section require disclosure of the possible consequences of treating realized gains and losses differently from unrealized gains and losses.
Response	The reviewers agree and made the change.
Appendix 1, Background and Current Practices	
Comment	One commentator wrote that the relevance of the appendix wasn't clear and that it seemed unnecessary. The commentator also noted that the appendix incorrectly equated the use of market value with financial economics.
Response	The reviewers note that the appendix is provided for informational purposes and is not part of the standard. It is intended to describe current actuarial practice. However, the reviewers agree that the appendix incorrectly implied that traditional actuarial practice involved only the use of asset valuation methods other than market value, and that actuaries who apply the principles of financial economics were the only actuaries who use market value. The reviewers revised the appendix to correct this.



**Actuarial Standard
of Practice
No. 45**

The Use of Health Status Based Risk Adjustment Methodologies

**Developed by the
Health Risk Adjustment Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
January 2012**

(Doc. No. 164)

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January 2012

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Use of Health Status Based Risk Adjustment Methodologies

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 45

This document contains the final version of ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*.

Background

Health status based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. The importance and influence of health status based risk adjustment methodologies are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover and other programs adopt the use of risk adjustment. ASOP No. 12, *Risk Classification (for All Practice Areas)*, provides guidance to “all actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems used in connection with financial or personal security systems.” It applies more broadly than this ASOP. This ASOP is intended to provide guidance regarding the appropriate use of health status based risk adjustment models and methods. This standard requires actuaries to explicitly consider important characteristics of the risk adjustment models and their use, rather than allowing actuaries to assume important issues are already addressed within any given risk adjustment software model.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in April 2011 with a comment deadline of July 31, 2011. Ten comment letters were received and considered in developing modifications that were reflected in the final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2.

Key Changes

The most significant changes from the exposure draft were as follows:

1. A definition for estimation period was added to the definitions section, the term “data collection period” was changed to “incurrable period” in section 3.1.5 and further background on timing issues was added to appendix 1.

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2. In Section 3.1.3, language was added to address instances where descriptions of changes from a prior model version were not available.
3. Section 3.2, Input Data, was rewritten to clarify the meaning.
4. In section 3.6, the level of transparency afforded by the model was added as a consideration in recalibration of the model.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in January 2012 to adopt this standard.

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Health Risk Adjustment Task Force

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 45

THE USE OF HEALTH STATUS BASED RISK ADJUSTMENT METHODOLOGIES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries applying health status based risk adjustment methodologies to quantify differences in relative healthcare resource use due to differences in health status.
- 1.2 **Scope**—This standard applies to actuaries quantifying differences in morbidity across organizations, populations, programs and time periods using commercial, publicly available or other health status based risk adjustment models or software products. It does not apply to actuaries designing health status based risk adjustment models. Actuaries who perform professional services with respect to designing, reviewing, or changing risk classification systems should be guided by ASOP No. 12, *Risk Classification (for all Practice Areas)*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for any professional services using health status based risk adjustment methodologies performed on or after July 1, 2012.

Section 2. Definitions

- 2.1 **Carve-out**—A medical service or condition not covered by the program under review or covered under a different reimbursement arrangement, such as a capitation. A common carve-out is mental health services.
- 2.2 **Coding**—The process of recording and submitting information (for example, diagnoses or services provided) on claims forms.

- 2.3 **Condition Category**—A grouping of medical conditions that have similar expected healthcare resource use or clinical characteristics.
- 2.4 **Credibility**—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).
- 2.5 **Diagnostic Services**—Services (for example, lab or radiology) provided to determine whether a medical condition exists. Having these services performed does not by itself indicate a condition exists, although the result of the test may indicate it does.
- 2.6 **Estimation Period**—The period for which differences in morbidity are being quantified by the risk adjustment methodology.
- 2.7 **Expert**—One who is qualified by knowledge, skill, experience, training, or education to render an opinion concerning the matter at hand.
- 2.8 **Health Status Based**—Using healthcare claims, pharmacy claims, lab test results, health risk appraisal or other data based on underlying conditions or treatment as well as demographic information such as age and gender.
- 2.9 **Morbidity**—The incidence of or resource use associated with a medical condition or group of conditions.
- 2.10 **Program**—Health benefit programs including but not limited to commercial and employer sponsored health insurance, self-funded employer health insurance, and government sponsored health insurance, such as Medicaid and Medicare.
- 2.11 **Recalibration**—The process of modifying the risk adjustment model, usually the risk weights. Recalibration is often used to make the risk adjustment model more specific to the population, data, and other characteristics of the project for which it is being used.
- 2.12 **Risk Adjustment**—The process by which relative risk factors are assigned to individuals or groups based on expected resource use and by which those factors are taken into consideration and applied.
- 2.13 **Risk Weight**—The value assigned to each condition category that indicates the expected contribution of that condition category to an individual's estimated resource use.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Model Selection and Implementation**—The actuary should select an appropriate risk adjustment model and implementation methodology, based on the actuary's professional judgment, with consideration given to the items discussed below.

- 3.1.1 **Intended Use**—The actuary should consider the degree to which the model was designed to estimate what the actuary is trying to measure. For example, the model may have been developed to estimate differences in total allowed costs, while the actuary may be trying to measure or project differences in paid costs for a high deductible plan, or differences in allowed costs for a single service category such as pharmacy.
- 3.1.2 **Impact on Program**—The actuary should consider whether the risk adjustment system may cause changes in behavior because of underlying incentives. For example, it may not be appropriate to include a health plan’s cost or provider’s prior charges as a risk adjustment variable when risk adjustment is used in determining health plan or provider payment.
- 3.1.3 **Model Version**—Since models are often updated, the actuary should consider the specific version of the model being utilized. If the actuary is using a new version of a previously utilized model, the actuary should consider the materiality of changes to the model. If a description of the changes from a prior version is not available, the actuary should consider comparing results under different model versions.
- 3.1.4 **Population and Program**—The actuary should consider if the population and program to which the model is being applied are reasonably consistent with those used to develop the model. For example, some models are intended for a commercial population and program while others are intended for Medicare or Medicaid. In addition, some Medicaid programs exclude carve-outs such as pharmacy and mental health services from the list of health plan at-risk services.
- 3.1.5 **Timing of Data Collection, Measurement, and Estimation**—Typically, at least small differences in timing between the development of the model and the application of the model will exist. The actuary should consider the impact of differences between the application of the model and its development with respect to timing issues such as the incurrable period, estimation period, and claims run-out period.
- 3.1.6 **Transparency**—The actuary should consider the level of transparency that is appropriate for the intended use, and whether the model affords that level of transparency. For example, some commercially available models do not allow risk weights to be published.
- 3.1.7 **Predictive Ability**—The actuary should consider the predictive ability of the model and the characteristics of the various predictive performance measures commonly used and published.

- 3.1.8 **Reliance on Experts**—Risk adjustment models may incorporate specialized knowledge that may be outside of an actuary’s area of expertise. The actuary should consider whether the individual or individuals upon whom the actuary is relying are experts in risk adjustment and should understand the extent to which the model has been reviewed or opined on by experts in risk adjustment models.
- 3.1.9 **Practical Considerations**—The actuary should consider practical limitations and issues with any given model and methodology including the cost of the model, the actuary’s and other stakeholders’ familiarity with the model, and its availability.
- 3.2 **Input Data**—The type of input data that is used in the application of risk adjustment should be reasonably consistent with the type of data used to develop the model. Also the type of input data should be reasonably consistent across organizations, populations, and time periods. If such consistency is not possible, the actuary should document why the combination of that data and the selected model was used, and any adjustments made to the data, model, or methodology to address limitations in the data. If sufficient information concerning the quality and type of input data used to develop or apply the model is not available, the actuary should consider whether use of the model is appropriate. When evaluating consistency of input data, the actuary should consider the following:
- 3.2.1 **Provider Contracts**—The actuary should consider the differences in provider contracts and the potential impact of these differences on the risk adjustment results. For example, one organization may pay fee for service and another may pay capitation. This can cause significant differences in risk adjustment results based on data quality rather than morbidity.
- 3.2.2 **Diagnostic Services**—The actuary should determine how the model handles diagnostic services and whether data for those services should be included in the data input into the model.
- 3.2.3 **Coding and Other Data Issues**—Because risk adjustment model results are affected by the accuracy and completeness of diagnosis codes or services coded, the actuary should consider the impact of differences in the accuracy and completeness of coding across organizations and time periods. This standard does not require the actuary to quantify the portion of measured morbidity differences due to coding or other data issues and the portion due to true morbidity differences. However, the actuary should consider how coding, incomplete data, and other data issues may be affecting the results and consider whether adjustments to the risk adjustment process are appropriate. Adjustments may include phase-in, the use of alternate models, and adjustment for changes in coding over time or across organizations.
- 3.3 **Program Specifics**—The specifics of the program for which risk adjustment is being used should be considered. For example, the presence of reinsurance may affect the impact of

high cost individuals or the program may carve out some services from costs that are at risk to health plans or providers.

3.4 **Assigning Risk Scores to Individuals with Limited Data**—The actuary should consider the minimum criteria required for an individual to be included in the risk adjustment analysis such as a minimum number of months of eligibility in the incurrable period. Where these minimum criteria are not met, the actuary should identify an appropriate measure of morbidity to be used. Approaches to handling these individuals include, but are not limited to, assigning an age/gender factor, assigning an average risk score for the scored individuals or excluding them from the analysis while also dampening the results.

3.5 **Addressing Model and Methodology Limitations**—When implementing risk adjustment results, the actuary should consider any limitations with the data, model or underlying program fundamentals. The actuary may determine that risk adjustment results should be modified before application due to such limitations.

If using a risk adjustment model on a population for which it was not originally designed, the actuary should consider appropriate adjustments, such as recalibration and condition or demographic category groupings.

3.6 **Recalibration**—The actuary should consider the necessity and advantages of recalibration in the context of available resources, materiality of expected changes in results, appropriateness of the unadjusted model risk weights, level of transparency afforded by the model, and limitations in the data available for recalibration.

The actuary should consider the credibility of data and observations for specific condition categories before changes to the model are made. The actuary should consider the reasonability and implications of any changes to the relative weights for condition or other groupings.

3.7 **Use in Combination with Other Rating Variables**—When risk adjustment is used in combination with other rating variables such as age or gender, industry or area, the actuary should consider whether those variables capture differences in morbidity already captured by the risk adjustment model, and make the appropriate modifications.

3.8 **Budget or Cost Neutrality**—One of the goals of the risk adjustment application may be to shift funds without increasing or decreasing the overall budget or cost. In this situation, the actuary should consider changes in the composition of the group being risk-adjusted between the historic and projected time periods, changes in data coding and quality, program changes, and any other changes that have the potential to materially affect overall results.

Section 4. Communications and Disclosures:

- 4.1 **Actuarial Communications**—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41, *Actuarial Communications*.
- 4.2 **Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:
 - a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1—Background and Current Practices

Health status based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. Its importance and influence are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover and other programs adopt the use of risk adjustment.

Risk-adjustment is a powerful tool in the health insurance marketplace. Risk adjusters allow health insurance programs to measure the morbidity of the members within different groups and pay participating health plans fairly. In turn, health plans can better protect themselves against adverse selection and are arguably more likely to remain in the marketplace. This in turn increases competition and choice for consumers.

Risk adjusters also provide a useful tool for health plan underwriting and rating. They allow health plans to more accurately estimate future costs for the members and groups they currently insure.

Finally, risk adjusters provide a ready, uniform tool for grouping people within clinically meaningful categories. This categorization allows for better trend measurement, care management and outcomes measurement. The risk adjustment structure, like benchmarks for service category utilization, creates consistency in reporting and communication across different departments within an insurance company. For example, medical management, actuarial and finance professionals can measure the impacts of their care management programs.

Risk adjustment is widely used in government programs including Medicare Advantage, state Medicaid, and healthcare reform programs. In addition, it is used in provider payment, medical management, employer multi-option contribution setting and in many other applications that require objective estimation of morbidity.

Actuaries typically use models developed by commercial vendors or publicly available models such as CDPS, MedicaidRx or CMS' HCC models. Concurrent models are usually used to measure morbidity when the incurral and measurement periods are the same, while prospective models are usually used if the estimation period is after the incurral period.

Concurrent models are used to analyze historical costs. Concurrent models can be used to assess relative resource use and to determine compensation to providers for services rendered because it normalizes costs across members with different health statuses. Normally, concurrent models provide an assessment of what costs should have been for members, given the conditions with which they presented in the past year. Prospective models are used to estimate future costs for a group of members.

The following are examples of risk assessment (evaluation of risk at the individual or population level, resulting in risk scores) and risk adjustment (the use of risk scores to allocate reimbursement or assign costs among different individuals or populations). The risk assessment examples (Examples 1 and 2) below are taken from the American Academy of Actuaries' May 2010 Issue Brief, titled "Risk Assessment and Risk Adjustment." These examples show how the risk score for two different 32 year old males is developed based on their health claims history. (This is illustrative; not all risk adjustment models use this type of additive convention.)

Example 1: John Smith, age 32, has diabetes, asthma/COPD and dermatology diagnoses in his claims history.

Risk Marker	Risk Weight
Male, Age 32	0.22
Diabetes with significant co-morbidities	1.32
Asthma/COPD	0.96
Low cost dermatology	0.30
Total Risk Score	2.80

The "Total Risk Score" in the table above is equal to the sum of the demographic and condition risk weights shown in the table. Usually, risk scores are stated relative to 1.0, with 1.0 being equal to the average expected risk score across the entire population. In this example, John Smith would be expected to cost 2.8 times an average member.

Example 2: Mark Johnson, age 32, has eligibility history but no claims.

Risk Marker	Risk Weight
Male, Age 32	0.22
Total Risk Score	0.22

In this example, the total risk score is equal to only the demographic risk weight and is much lower than the total risk score for John Smith. The estimated cost ratio using risk adjustment factors would be $0.22 / 2.80$ or 0.079. Therefore, Mark Johnson's costs would be expected to be 7.9% of those of John Smith, and 22% of those of an average member.

Risk scores can be aggregated for groups of individuals. The following example shows the application of relative risk scores within the risk adjustment process for the Massachusetts Health Insurance Connector (Exchange). This example is taken from Ian Duncan: *Healthcare Risk Adjustment and Predictive Modeling* (Actex Publications, 2011). In this example, the claim cost portion of the capitation rate was \$393.67 per member per month (PMPM) at a 1.0 average plan type factor, 1.0 average geographic factor, and 1.0 average risk factor.

Example of Calculation of Overall Adjustment Factor								
Member	Plan Type	Region	Age	Gender	Rating Factors			
					Plan Type (a)	Geographic (b)	Risk (c)	Total (a)x(b)x(c)
001	I	North	27	F	1.0619	0.9468	0.8694	0.8741
002*	I	North	22	F	1.0619	0.9468	0.9970	1.0024
003	II	North	35	M	0.9461	0.9468	0.9108	0.8159
004*	II	Central	44	F	0.9461	1.1589	1.0350	1.1348
005	III	Central	54	M	0.8909	1.1589	1.2533	1.2941
					Average	1.0242		

*Members 002 and 004 had seven or more months of experience during the historic experience period. Therefore, they receive a condition-based risk factor rather than an age/gender risk factor.

The relative risk factor, adjusted for geographic and plan type risk, is applied to the baseline risk premium and an administrative load (\$32.00) is added:

$$\$393.67 \times 1.0242 + \$32.00 = \$435.20.$$

This Health Plan would be paid \$435.20 PMPM.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *The Use of Health Status Based Risk Adjustment Methodologies*, was issued in April 2011 with a comment deadline of July 31, 2011. Ten comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Health Risk Adjustment Task Force of the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Task Force, the Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this final version.

GENERAL COMMENTS	
Comment	One commentator stated that the ASOP should describe the core knowledge an actuary needed to have in order to perform analysis using risk adjustment methods.
Response	ASOPs do not include qualification requirements. The reviewers refer the commentator to Precept 2 of the <i>Code of Professional Conduct</i> and the U.S. Qualification Standards promulgated by the American Academy of Actuaries.
Comment	Several commentators stated that the ASOP should provide more guidance and noted specific areas where they thought guidance should be provided. In many instances, the commentators suggested adding technical details and more specificity, including examples. In addition, one commentator stated that the ASOP did not provide meaningful standards of practice, only a list of considerations.
Response	The reviewers believe the ASOP provides sufficient guidance. Additional details might be appropriate for a practice note or textbook. The reviewers did add additional guidance concerning specific issues around the timing of models, as discussed below.
Comment	Several commentators stated that the ASOP should list reference material.
Response	The reviewers believe it is not appropriate for this ASOP to list reference material since material in this area can quickly become out of date. Therefore, no change was made to the ASOP.
Comment	One commentator stated that many of the considerations in the ASOP were not practical or significant, particularly for employer-specific health plan analyses. The commentator stated that the ASOP briefly mentioned practical considerations, but requested that examples of where the ASOP was not applicable be documented.
Response	The reviewers believe the scope of the ASOP is clearly defined, and that section 3.1.9, Practical Considerations, provides sufficient weight to practical considerations. Therefore, no change was made to the ASOP.

ASOP No. 45—January 2012

Comment	One commentator suggested adding a section on uncertainty.
Response	The reviewers note that section 3.1.7, Predictive Ability, requires the actuary to consider the predictive ability of the model; and ASOP No. 41, <i>Actuarial Communications</i> , requires the actuary to communicate any cautions related to uncertainty. Therefore, no change was made to the ASOP.
Comment	Several commentators suggested adding additional examples under several sections.
Response	The reviewers believe the examples provided are sufficient, and note that the material in appendix 1 was expanded to provide additional background.
Comment	A commentator stated that actuaries should be required to educate intended users on the purpose of risk adjustment, the models available, their different uses, and the advantages and disadvantages.
Response	The reviewers believe ASOP No. 41 provides sufficient guidance on communication. Therefore, no change was made to the ASOP.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested adding “publicly available” to “commercial or other.”
Response	The reviewers agreed and added “publicly available” to the list in section 1.2.
SECTION 2. DEFINITIONS	
Comment	Two commentators suggested that definitions for data collection period, estimation period, and claim run-out period be added.
Response	A definition for estimation period was added to the definitions section. In section 3.1.5, “data collection period” was modified to “incurrable period.” Appendix 1 was expanded to include additional discussion on timing issues.
Comment	Several commentators suggested adding definitions and guidance regarding prospective and concurrent models, and making the distinction between “risk adjustment” and “risk assessment.”
Response	The reviewers agreed and added discussion of these topics to the appendix.
Section 2.8, Health Status Based	
Comment	One commentator suggested that the definition of “health status based” be expanded to specifically list pharmacy claims.
Response	The reviewers believe this explicit recognition of pharmacy claims would be useful in understanding the definition and added pharmacy claims to the definition.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator suggested making the terminology referring to risk adjustment model and risk adjustment methodology consistent with the proposed rules under the Affordable Care Act.
Response	The reviewers believe the terms are appropriate as included. Terminology in various ASOPs is sometimes different from that used in regulations. ASOPs are generally developed so that they do not need to be revised as new laws and regulations are proposed, passed, and changed. Therefore, no change was made to the ASOP.

ASOP No. 45—January 2012

Section 3.1.1, Intended Use	
Comment	One commentator suggested that section 3.1.1 could be interpreted to have a “yes” or “no” answer when the more typical situation involved a degree or spectrum of closeness.
Response	The reviewers agreed and replaced “whether” with “the degree to which.”
Section 3.1.3, Model Version	
Comment	One commentator stated that compliance with the requirement that a comparison to prior versions be conducted may not always be possible.
Response	The reviewers agreed that the language in the ASOP may unintentionally imply too high of a standard. Further language was added clarifying that the information may not be readily available and that the actuary should consider comparing results under different versions.
Section 3.1.7, Predictive Ability	
Comment	One commentator suggested that the actuary should consider who may have accountability to monitor predictive ability on an ongoing basis.
Response	The reviewers believe such a requirement is unnecessary. Therefore, no change was made to the ASOP.
Section 3.1.8, Reliance on Experts	
Comment	One commentator suggested that a statement such as the following be added: “the actuary should consider, if appropriate, relying on outside expertise if aspects of the model are not readily understood by the actuary.” The commentator used an example of an actuary not fully understanding the clinical input used to develop a model and seemed to suggest the actuary should understand such clinical input and aspects before using a model. Another commentator stated that the reliance on experts section was potentially too prescriptive and stated that it would be impossible to know if the model developer was an expert if they were deceased. Another commentator had a concern similar to the second one listed here and asked if a reliance statement from the expert would be necessary.
Response	The reviewers believe actuaries relying on others can assess the expertise of those individuals. The reliance on experts language in this ASOP is consistent with the relevant requirements in ASOP No. 38, <i>Using Models Outside the Actuary’s Area of Expertise (Property and Casualty)</i> . Therefore, no change was made to the ASOP.
Section 3.2, Input Data	
Comment	One commentator stated that actuaries may not have access to input data used to develop a model and therefore could not assess the consistency of the model development and the application of the model.
Response	The reviewers believe this section needed further clarification and additional flexibility for practicing actuaries. This section has been edited to address these issues.
Comment	One commentator stated that actuaries should have a deep understanding of the data used to develop the model and be aware of any hidden variables such as race or income.
Response	The reviewers believe the revised section 3.2 places an appropriate level of responsibility on the actuary. Therefore, no change was made to the ASOP.
Comment	One commentator suggested adding other input data such as income level or socioeconomic information, self-reported health data (health-risk assessments), and lifestyle-related data.
Response	Sections 3.2.1, 3.2.2, and 3.2.3 talk about specific data issues that may exist in widely used models. The reviewers believe including discussion of variables not widely used may unnecessarily complicate the ASOP. If used in a model, the ASOP (specifically, section 3.2) requires the actuary to consider consistency of these variables even if they are not specifically listed. Therefore, no change was made to the ASOP.

ASOP No. 45—January 2012

Section 3.2.3, Coding and Other Data Issues	
Comment	One commentator suggested that the term coding be included in the definitions.
Response	The reviewers agreed and added the definition in section 2.2.
Comment	One commentator suggested adding data validation to the section 3.2.2 heading and further detail and requirements regarding considering differences in coding.
Response	The reviewers believe the suggested changes are unnecessary and may overlap with other sections where data issues are also discussed. Therefore, no change was made to the ASOP.
Section 3.4, Assigning Risk Scores to Individuals with Limited Data	
Comment	One commentator requested that the discussion of assigning risk scores to individuals with limited experience be more explicit.
Response	The reviewers agreed and added “such as a minimum number of months of eligibility in the incurral period.”
Comment	One commentator suggested that excluding individuals from the analysis did not dampen the results.
Response	The reviewers removed the word “effectively” and added “while also” since the intent in the example was an active dampening of the results, not that excluding the individuals would automatically dampen the results.
Section 3.5, Addressing Model and Methodology Limitations	
Comment	Two commentators suggested that, while existing communication standards require certain communications, this ASOP reinforce requirements in specific areas including adjustments to address model and methodology limitations.
Response	The reviewers note ASOP No. 41 includes the following statement regarding required documentation in section 3.6: “Such documentation should identify the data, assumptions, and methods used by the actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the actuary’s work.” Therefore, no change was made to the ASOP.
Section 3.6, Recalibration	
Comment	One commentator suggested that an actuary should consider the extent to which an actuary could recalibrate the model because of a lack of transparency.
Response	The reviewers agreed the level of transparency would affect an actuary’s ability to recalibrate a model, and added transparency in the list of considerations in this section.
Comment	One commentator suggested that actuaries be required to recalibrate when there are inconsistencies between model development and model application or communicate uncertainty if recalibration is not performed.
Response	The reviewers disagree and believe the ASOP requires the appropriate level of review and communication. Therefore, no change was made to the ASOP.
APPENDIX 1—BACKGROUND AND CURRENT PRACTICES	
Comment	One commentator noted that the background and current practices section of the appendix stated that risk adjustment has been an important tool in the health insurance marketplace since the 1970s while the background section in the exposure draft’s transmittal memorandum referenced the 1980s.
Response	The reviewers note that the 1970s was the correct reference.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 46**

Risk Evaluation in Enterprise Risk Management

**Developed by the
Enterprise Risk Management Task Force of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2012**

Doc. No. 165

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September 2012

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Risk Evaluation in Enterprise Risk Management

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 46

This document contains the final version of ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

Background

Enterprise Risk Management (ERM) has been defined by the Casualty Actuarial Society in 2003 as follows:

The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

This definition was also adopted by the Society of Actuaries in 2005.

Enterprise Risk Management is a rapidly emerging specialty within the actuarial community and, with the new CERA risk management educational certification, could well become an area of practice for actuaries with no tie to traditional actuarial work. The CERA is a globally-recognized ERM designation supported by actuarial organizations in 12 countries with rigorous educational programs.

The ERM Task Force was formed in the fall of 2009 to revisit the need for ERM standards that was previously addressed by an earlier task force in 2007. In June 2010, the Task Force presented findings to the ASB and was then asked to go forward with the development of standards for two broad topics relating to ERM, Risk Evaluation and Risk Treatment.

In March of 2011, two discussion drafts on risk evaluation and risk treatment were posted to the ASB website. The ERM Task Force reviewed the comments received and based on those comments, began work on the development of exposure drafts of standards on risk evaluation and risk treatment for presentation to the ASB.

This ASOP considers the topic of risk evaluation. The process of risk evaluation is a fundamental part of risk management systems that are found in organizations. In this context, risk is intended to mean the potential of future losses or shortfalls from expectations due to deviation of actual results from expected results. Evaluation of expected losses and provisions for expected losses is a common actuarial task that is not considered directly by this standard.

This standard applies to enterprise risk evaluation performed by actuaries. Some organizations will face requirements and requests for assessment of the risk evaluation part of the risk management system, in order to evaluate whether their risk management systems are operating at a level that meets or exceeds professional standards. Regulators in some industries may want similar evaluations.

As described above, the ERM Task Force has also been actively working on a second proposed ASOP, *Risk Treatment in Enterprise Risk Management*. The second proposed ASOP considers the topic of risk treatment, which is the process of selecting and implementing actions to modify risks. Risk treatment is found in insurers, pension plans, other financial service organizations, and most businesses or organizations, and is typically a part of a risk management system. This second proposed ASOP was exposed with a comment deadline of September 10, 2012. The Task Force plans to present the proposed final standard on risk treatment to the ASB at its December 2012 meeting. Once the proposed ASOP, *Risk Treatment in Enterprise Risk Management* is adopted, the reference in section 1.2 of this ASOP No. 46 to proposed ASOP *Risk Treatment in Enterprise Risk Management* will be updated to reflect its adoption as final.

These two standards cover the risk evaluation and risk treatment activities within risk management work but do not cover other ERM practices that are performed by insurers, pension plans, other financial service firms, and other businesses or organizations. In the future, other standards may provide guidance for other aspects of actuarial professional services in ERM. These two topics were chosen because they cover the most common actuarial services performed within risk management systems of organizations.

These standards, as with all actuarial standards of practice, apply to the actions of individual actuaries, and not to their organizations, employers or clients.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in April 2012 with a comment deadline of June 30, 2012. Twenty-five comment letters were received and considered in developing modifications that were reflected in this final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard and did not result in substantive changes to the standard.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in September 2012 to adopt this standard.

ASOP No. 46—September 2012

Enterprise Risk Management Task Force

David N. Ingram, Chairperson	
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Eugene C. Connell	Max J. Rudolph
Wayne H. Fisher	David K. Sandberg
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Alan D. Ford	Patricia E. Matson
Patrick J. Grannan	James J. Murphy
Stephen G. Kellison	James F. Verlautz

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ASOP No. 46—September 2012

ACTUARIAL STANDARD OF PRACTICE NO. 46

RISK EVALUATION IN ENTERPRISE RISK MANAGEMENT

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk evaluation systems, including designing, developing, implementing, using, maintaining, and reviewing those systems.
- 1.2 **Scope**—This standard applies to actuaries when performing risk evaluation professional services for the purposes of enterprise risk management (ERM).

Risk evaluation is often performed as one part of an ERM control cycle. Within a typical ERM control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization.

This standard focuses on five aspects of risk evaluation: risk evaluation models, economic capital, stress testing, emerging risks, and other risk evaluations. Guidance for activities related to risk treatment is addressed in proposed ASOP, *Risk Treatment in Enterprise Risk Management*.

This standard does not apply to actuaries when performing risk evaluation professional services that are not for the purposes of ERM. Examples of risk evaluation services that may be performed for purposes other than ERM include pricing of insurance products, and the evaluation of liabilities of insurers and pension plans.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard is effective for any professional services with respect to risk evaluation in enterprise risk management performed on or after May 1, 2013.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Economic Capital**—The amount of capital an organization requires to survive or to meet a business objective for a specified period of time and risk metric, given its risk profile.
- 2.2 **Emerging Risk**—New or evolving risks that may be difficult to manage since their likelihood, impact, timing or interdependency with other risks are highly uncertain.
- 2.3 **Enterprise Risk Management**—The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization’s short- and long-term value to its stakeholders.
- 2.4 **Enterprise Risk Management Control Cycle**—The continuing process by which risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached.
- 2.5 **Organization**—The entity for which ERM is being performed. Examples include public or private companies, government entities, and associations, whether for profit or not for profit.
- 2.6 **Risk**—The potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.
- 2.7 **Risk Appetite**—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.
- 2.8 **Risk Evaluation System**—A combination of practices, tools, and methodologies within a risk management system used to measure the potential impacts of risk events on the performance metrics of an organization.
- 2.9 **Risk Limit**—A threshold used to monitor the actual risk exposure of a specific unit or units of the organization to ensure that the level of aggregate risk remains within the risk tolerance.
- 2.10 **Risk Management System**—A combination of practices, tools and methodologies that an organization uses to identify, assess, measure, mitigate, and manage the risks it faces during the course of conducting its business.

- 2.11. **Risk Metric**—A measure of risk. Examples include value at risk, expected policyholders deficit, and conditional tail expectation.
- 2.12. **Risk Mitigation**—Action that reduces the frequency or severity of a risk.
- 2.13. **Risk Profile**—The risks to which an organization is exposed over a specified period of time.
- 2.14. **Risk Tolerance**—The aggregate risk-taking capacity of an organization.
- 2.15. **Scenario Test**—A process for assessing the impact of one possible event or several simultaneously or sequentially occurring possible events on an organization’s financial position.
- 2.16. **Stress Test**—A process for measuring the impact of adverse changes in one or relatively few factors affecting an organization’s financial position.

Section 3. Analysis of Issues and Recommended Practices

- 3.1. **Risk Evaluation**—An actuary may be called upon to evaluate risk in many contexts, using various tools such as economic capital models and stress and scenario tests. In performing services related to risk evaluation, the actuary should consider, or may rely on others who have considered, the following:
 - a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment. Such information may include the following:
 1. the financial flexibility of the organization;
 2. the nature, scale, and complexity of the risks faced by the organization;
 3. the potential differences between the current and long-term risk environments;
 4. the organization’s strategic goals, including goals for the level and volatility of profits, both short term and long term;
 5. the interests, including the risk/reward expectations, of relevant stakeholders. These stakeholders may include some or all of the following: owners, boards of directors, management, customers, partners, employees, regulators and others potentially impacted by the organization’s management of risk;
 6. regulatory or rating agency criteria for risk levels and the implications of

potential risk levels on the continuation of business operations as reflected in ratings or other external measures of security;

7. the degree to which the organization's different risks interact with one another; actual and perceived diversification benefits; and dependencies or correlations of the different risks;
8. limitations to the fungibility of capital across the organization; and
9. the extent to which the organization's exposure to risks may differ from the exposures of its competitors.

The actuary may rely on management's opinions of the risk environment, may form an independent opinion of the risk environment, may rely on a third party's evaluation of the risk environment, or may infer a risk environment from current conditions (such as market prices and political climate, among others).

- b. information about the organization's own risk management system as appropriate to the assignment. Such information may include the following:
 1. the risk tolerance of the organization;
 2. the risk appetite of the organization. This may be explicit or inferred from objectives of the organization including those related to solvency, market confidence, earnings expectations, or other objectives;
 3. the components of the organization's enterprise risk management control cycle;
 4. the knowledge and experience of the management and the board of directors regarding risk assessment and risk management; and
 5. the actual execution of the organization's enterprise risk management control cycle including how unexpected outcomes are acted upon.
- c. the relationship between the organization's financial strength, risk profile, and risk environment as identified in (a) above, and the organization's risk management system as identified in (b) above. If in the actuary's professional judgment, as appropriate to the assignment, a significant inconsistency exists, then that inconsistency should be reflected in the risk evaluation.
- d. the intended purpose and uses of the actuarial work product.

- 3.2 **Considerations Related to Risk Evaluation Models**—In developing, reviewing, or maintaining models used in risk evaluation, the actuary should consider, or may rely on others who have considered, the following:

- a. whether the models are fit for the purpose. In making that determination, the actuary may review the following:
 - 1. the degree to which the models need to be reproducible and adaptable to new risks;
 - 2. the sophistication of the models in proportion to the materiality of the risks they cover;
 - 3. the practical considerations for the models, including usability, reliability, timeliness, process effectiveness, technological capabilities, and cost efficiency;
 - 4. the inherent statistical and theoretical limitations of the models;
 - 5. the quality, accuracy, appropriateness, timeliness, and completeness of data underlying the models;
 - 6. the appropriateness of the methodologies used for model verification and validation, calibration, and sensitivity testing;
 - 7. the appropriateness of the methodologies used for modeling dependencies among risks; and
 - 8. the appropriateness of the cash flow and discounting methodologies used in the models.
 - b. whether the model assumptions are appropriate. In making that determination, the actuary should consider the following:
 - 1. whether the assumptions are supportable, appropriately documented, and allow for deviations from the expected;
 - 2. whether the assumptions are regularly revisited to determine their appropriateness; and
 - 3. whether the assumptions that explicitly reflect anticipated management actions in response to future events are supportable and appropriately documented.
- 3.3 Economic Capital—Within ERM programs, actuaries are often called upon for assistance in determining the economic capital of the organization.
- 3.3.1 Considerations Relating to an Economic Capital Model—In performing actuarial tasks relating to designing, developing, and reviewing an economic capital model,

the actuary should consider the following, if appropriate to the assignment:

- a. the appropriateness of the selected time frame, basis of measuring loss (for example, solvency, regulatory standards, earnings loss, reputation damage), and risk metric underlying the organization's definition of economic capital relative to how it is used to support strategic decisions;
- b. the degree to which the economic capital model reflects the significant risks of the organization and the interdependencies of those risks in a consistent and comprehensive manner; and
- c. the appropriateness of the method used to model each risk. Some risks are more appropriately modeled stochastically while others may be more appropriately modeled using stress tests.

3.3.2 **Reliance on Accounting Framework**—The actuary's references to and reliance on accounting frameworks in an economic capital model should be consistent throughout the model and appropriate for the model's intended use.

3.3.3 **Methods**—In determining economic capital, the actuary should select a method or combination of methods where the input(s) to the method(s) and the results of the method(s) are consistent with the tasks and considerations listed in sections 3.1, 3.2, and 3.3.1. Examples of methods include the following:

- a. **Stress Tests**—A specific degree of adversity is assumed and the financial impact of that adverse experience upon the organization is estimated by the actuary.
- b. **Stochastic Models**—A distribution of possible future outcomes is determined either directly or through a model that calculates the impact of a risk assumption on the financial outcomes. Using stochastic models for economic capital requires the specification of a confidence interval.
- c. **Reference to Standard Measures**—Regulatory and rating agency capital models produce standard risk metrics. Definitions of economic capital sometimes make reference to required regulatory and rating agency capital.

3.3.4 **Assumptions**—The actuary should use professional judgment in the selection of assumptions, recognizing that economic capital models often focus on perceived remote, highly unlikely conditions or losses that might be experienced by an organization. In forming that judgment, the actuary should consider the following, if appropriate:

- a. historical data available;

- b. prices in the marketplace;
 - c. opinions of other experts;
 - d. the fit of the assumed distribution to available data;
 - e. the ability of the assumed distribution to reflect possible extreme values;
 - f. sensitivity of results to changes in assumptions;
 - g. internal consistency of the assumptions; and
 - h. consistency in the application of assumptions.
- 3.3.5 **Validation of the Economic Capital Model**—Economic capital is often determined based on the results of stochastic models that produce a large number of outcomes. The actuary should devise appropriate tests of the distribution of outcomes calculated by the model (for example, in comparison to the range of results in similar models or to historical outcomes over time) and the sensitivity of those distributions to changes in the assumptions and parameters. The actuary should also perform validation tests to determine whether the model results are reasonably consistent with relevant items of the underlying balance sheet and income statements of the organization.
- 3.3.6 **Disclosure**—The actuary should comply with the disclosure requirements outlined in section 4.1.1.
- 3.4 **Stress and Scenario Testing**—Stress and scenario tests are used for many risk management and regulatory purposes.
- 3.4.1 **Considerations Relating to Stress and Scenario Tests**—The actuary should consider the following, if appropriate to the assignment:
- a. the extent to which various stress tests reflect similar or different degrees of adversity. Using different degrees of adversity may affect the comparability of stress tests;
 - b. any items in the organization’s business plan that describe how the organization will function during an extreme event(s) as well as any historical organizational examples;
 - c. that an extreme event scenario may be a single event or a series of events that, taken together, have catastrophic results;
 - d. how actions and reactions of various stakeholders and markets during extreme events may differ from those during “normal” times;

- e. whether the assumed interdependencies are appropriate under the stress or scenario testing assumptions due to the possibility of unanticipated consequences when risks interact in ways not seen historically;
- f. how to define situations that result in a non-quantifiable risk and how to show plausible financial effects on the organization; and
- g. that some stress and scenario tests will be hypothetical situations for which the actuary will not need to validate the degree to which the scenario is realistic.

3.4.2 **Methods**—A basic requirement for a stress or scenario test is a forecasting process or system. The actuary should consider whether the objectives of the stress or scenario test will be accomplished based on the forecasting process or system used. Approaches that may be used for stress and scenario testing include the following:

- a. **Models of Single Subsystems of the Organization**—Some very simple stress tests can be performed by modifying a single element that is being stressed. However, in most cases, even the simplest stress test requires the consideration of interdependencies throughout the organization. The results from various sub-models may be consolidated.
- b. **Fully Integrated and Automated Forecasting Model**—Economic capital models or business forecasting models may already be designed to reflect the interdependency of various elements or assumptions.

3.4.3 **Assumptions for Stress Tests**—The type and degree of stress for the stress test may be specified by others. Alternatively, the actuary may be called upon to identify the stresses that are important to the organization and to set assumptions regarding the type and degree of stress to be tested. In either case, the actuary should form a perspective regarding the ways that the defined stress impacts upon various elements of the organization, including consideration of the following:

- a. **Effect on Other Assumptions**—Many assumptions may differ significantly from their baseline values because of the defined stress.
- b. **Management Responses**—During an extreme event, management may delay decisions or make quick decisions that are inconsistent with business plans or prior practice.
- c. **Regulatory and Legislative Reactions**—Regulatory capital limits may be changed and organizations may have an immediate need for additional capital.

- d. **Risk Mitigation**—Risk mitigation alternatives and mechanisms to utilize those alternatives may or may not be present or fully effective.
 - e. **Time Element**—Some secondary effects under a scenario might occur in a later time period than the stress itself.
- 3.4.4 **Constructing Scenarios**—Many different types of scenario tests are possible. In some cases, the broad outline of a scenario might be specified by others and the actuary would make assumptions for many details. In other cases, the actuary is responsible for determining appropriate scenarios to be tested.
- a. The actuary should consider whether the scenarios need to be developed with consideration of the many different elements of the broad environment that might change from the baseline simultaneous with the main event under consideration.
 - b. In addition, the actuary should consider the other effects upon the organization as described in items (a) through (e) of section 3.4.3.
- 3.4.5 **Disclosure**—The actuary should comply with the disclosure requirements outlined in section 4.1.2.
- 3.5 **Emerging Risks**—In performing actuarial professional services regarding the evaluation of emerging risks, the actuary should consider the following:
- a. the potential impact of emerging risks across various time horizons; and
 - b. the potential secondary effects from an organization’s assumed actions in light of the onset of an emerging risk. These secondary effects may also arise from actions taken by individuals or entities not affiliated with the organization whose risks are being evaluated.
- The actuary should comply with the disclosure requirements outlined in section 4.1.3.
- 3.6 **Other Risk Evaluations**—In the course of managing risks in an ERM program, there are many situations where specific risk evaluations are performed to facilitate the monitoring and mitigation of key risks. These evaluations are used in risk treatment programs such as hedging, asset liability management, or reinsurance. The actuary should apply the guidance in sections 3.1 and 3.2 to these evaluations.
- 3.7 **Specific Circumstances**—Certain risk evaluations may be performed under significant time constraints and for use over a limited period of time. The actuary should use judgment as to the appropriate level of detail and the frequency of evaluation in consideration of this guidance.

- 3.8 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.
- 3.9 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

Section 4. Communications and Disclosures:

- 4.1. **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the risk evaluation and refer to ASOP Nos. 23 and 41, and if applicable, ASOP No. 38, *Using Models Outside the Actuary’s Area of Expertise (Property and Casualty)*. In particular, consistent with the intended use or purpose, the actuary should disclose the following, as appropriate:
- 4.1.1 **Economic Capital and Economic Capital Models**—The actuary should document and communicate the results of the economic capital model and their intended use, as described in section 3.3. The actuary should also disclose any known limitations of the economic capital model including an assessment of the potential impact of these limitations on model results and their use. The actuary should also disclose the time frame, the basis of measuring loss, and the risk metric.
- 4.1.2 **Stress and Scenario Tests**—The actuary should document and communicate the results of the stress and scenario tests and their intended use, as described in section 3.4. The actuary should also disclose any known limitations of the stress and scenario tests including an assessment of the potential impact of these limitations on results. The actuary should also disclose the time frame and the basis of measuring loss.
- 4.1.3 **Emerging Risks**—The actuary should disclose the methodologies and sources of information for identifying and evaluating emerging risks, as described in section 3.5. The actuary should also disclose the time frame and the basis of measuring loss.
- 4.1.4 **Changes in System/Process**—The actuary should disclose any material changes in the system, process, methodology, or assumptions from those previously used for the same type of measurement. The general effects of any such changes should be disclosed in words or by numerical data, as appropriate.
- 4.1.5 **Assumptions**—The actuary should disclose the significant assumptions used in the risk evaluation such as accounting constructs, economic values, stand-alone or portfolio views of risk. The actuary should disclose the interdependencies among risks and statistical distributions used in the evaluation. The actuary should

disclose any other significant assumptions used in the analysis, including anticipated future actions by management to manage or mitigate risks identified by the actuary.

4.1.6 **Risks Included**—The actuary should disclose the risks included in the risk evaluation and their relative significance. The actuary should also disclose known material risks not included and the rationale for not including those risks in the risk evaluation.

4.1.7 **Model Validation**—The actuary should disclose whether and how the modeled future economic conditions have been reviewed and tested for reasonableness. Items such as the sensitivity of the results to significant changes in the assumptions, time frame, basis of measuring loss, and risk metric may be disclosed.

4.2 **Deviation from Guidance in the Standard**—If the actuary departs from the guidance set forth in this standard, the actuary should include the following where applicable:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary disclaims responsibility for any material assumption or method in any situation not covered under section 4.2.1 above; and
- c. the disclosure in ASOP No. 41, section 4.4, if the actuary otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Enterprise Risk Management (ERM) has been a developing area of practice for actuaries for over 10 years. In 2001, the Casualty Actuarial Society (CAS) Advisory Committee on Enterprise Risk Management produced a report that recommended areas of research and education that were needed by actuaries entering this emerging field. In 2002, the Society of Actuaries (SOA) formed a Risk Management Task Force that wrote guides to Economic Capital and Enterprise Risk Management practice as well as initiating several research projects. In 2004, the task force evolved into a new Risk Management Section of the Society of Actuaries and became the first and largest joint activity in 2005 when it became the Joint Risk Management Section co-sponsored by the SOA, CAS, and the Canadian Institute of Actuaries (CIA). The Joint Risk Management Section has been tightly linked with an annual ERM Symposium event that started as a joint activity of the SOA, CAS, and the Professional Risk Managers' International Association (PRMIA), a non-actuarial risk management organization.

Enterprise Risk Management is also becoming a standard practice of many organizations that employ actuaries and its use has been steadily spreading. Poor ERM practice has been blamed by many for some or all of the ills of the 2008-2009 Global Financial Crisis. The G20 heads of state have called for significant improvements to risk management practices in the financial sector and have charged the Financial Stability Board and the International Monetary Fund to take steps to promote and sometimes require better risk management practices from financial sector firms. The International Association of Insurance Supervisors has responded to that by promulgating an Insurance Core Principle paper on Enterprise Risk Management requiring insurance regulators to promote ERM practice and self assessment of solvency needs by insurers globally. The National Association of Insurance Commissioners has developed a new requirement for an Own Risk and Solvency Assessment (ORSA) process that includes an assessment of risk management practices for larger insurers and the New York State Insurance Department has recently (December 2011) published a requirement that all insurers domiciled in the state must adopt an Enterprise Risk Management regime.

At the most fundamental level Enterprise Risk Management can be understood as a control cycle. Within a typical risk management control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization. This cycle can be applied to specific risks within a part of an organization or to an aggregation of all risks at the enterprise level.

Risk evaluation has long been a part of actuarial practice. Actuarial risk evaluations were long used by insurers to assess their capital needs and pricing for risks. Actuarial risk evaluations have also long been used and continue to be the objective functions in risk mitigation activities such as reinsurance, asset liability management and hedging within risk treatment programs. Risk evaluation is a key activity of the new ERM practice. An economic capital model has become a new standard tool for ERM programs. Stress tests are another risk evaluation process that has long been used by actuaries that has recently reemerged as a primary tool for ERM. The risk evaluation activities of actuaries in all of these situations are the subject of this standard. Actuarial services relating to risk treatment activities, specifically risk appetites, tolerances and limits as well as risk mitigation activities are considered in another standard on risk treatment in ERM.

Current Practices

Actuaries build, operate and maintain complex internal models for determination of economic risk capital using stochastic techniques to analyze long-term contingent liabilities and the associated value at risk or conditional tail expectation and develop and implement schemes to allocate the capital in a way that supports corporate goals for risk adjusted return. Actuaries have a central role and in many cases are the sole professionals involved in the preparation of these risk evaluations. Actuaries are also called upon to review economic capital models prepared by actuaries or by others professionals, to provide or review the assumptions underlying an economic capital model, document an organization's economic capital model; analyze the impact of a strategic decision on an organization's economic capital; recommend allocations of economic capital to units within an organization; and opine on the appropriateness of an organization's economic capital model relative to the organization's risk profile, risk tolerance, risk appetite or risk limits.

Actuaries also perform stress tests and other risk assessments for financial and other entities for the purposes of assessing the resiliency of the entity, for determining the effectiveness of risk mitigation activities and for reporting to regulators. Stress tests are increasingly important to prudential supervision of insurers as regulators find them to be a good way to ensure some consistency in risk evaluation and to better communicate a very complex topic. Actuaries may be asked to give opinions about the appropriateness of an organization's actual level of capital based upon stress tests.

Stress tests performed by actuaries are also used by organizations as a component of or to validate economic capital models, to set risk limits and as an aid in forming and communicating organization strategy.

Emerging risks are an important focus of the risk management programs of some organizations. Actuaries assist with the processes that organizations employ to assess their exposure to emerging risks. The actuary may be called upon to help with or perform tasks relating to identification and monitoring of emerging risks, propose or execute actions to be taken in the event of the onset of such risks and to analyze the impact of emerging risks on the stakeholders of the organization.

Actuaries also perform risk evaluation for a variety of other purposes. The actuary may be called upon to do the following:

- a. perform or review a risk evaluation of an entity prepared as part of merger and acquisition activity;
- b. perform or review a risk evaluation of a portion of an organization's business (for example, business unit or block of business) as part of a decision to buy/sell this portion of the business;
- c. perform or review a risk evaluation by a regulatory agency as part of an audit or an investigation;
- d. perform or review a risk evaluation by a rating agency as part of its rating process;
- e. perform or review a risk evaluation for a public entity's obligations; and
- f. perform or review a risk evaluation of an organization's strategic plans and goals.

Appendix 2

Comments on the Exposure Draft and Responses

The first exposure draft of this ASOP, *Risk Evaluation in Enterprise Risk Management*, was issued in April 2012 with a comment deadline of June 30, 2012. Twenty-five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The ERM Task Force carefully considered all comments received and the ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes members of the ERM Task Force and the ASB. Also, unless otherwise noted, the section numbers and titles used in this appendix refer to those in the first exposure draft.

GENERAL COMMENTS	
Comment	Several commentators suggested that the use of the term “confidence level,” which appeared in many places throughout the standard should be replaced with the more generic term “risk metric” because confidence level was only appropriate when the risk evaluation method was a stochastic model.
Response	The reviewers agree. In particular, the reviewers believe that the term “confidence level” was inappropriate for stress tests and in some other situations. The reviewers replaced the terms as suggested and added language regarding confidence intervals within the discussion of stochastic models in section 3.3.3(b).
Comment	Several letters were received from organizations. Some were supportive and shared their perspective on standards of practice for emerging practice areas, and others thought it was too early for these discussions and to put an ASOP in place. One noted that since “ERM is not an actuarial process” there is no need for an ASOP.
Response	The reviewers thank these organizations for sharing their perspectives and refer readers to the background section for information regarding why this ASOP was prepared at this point in time. In particular, it is important to note that ASOPs apply to individual actuaries practicing in the area covered by the ASOP and do not require the role to be one that is only performed by actuaries (other examples include ASOP No. 23, <i>Data Quality</i> , and ASOP No. 21, <i>Responding to or Assisting Auditors or Examiners in Connection with Financial Statements for All Practice Areas</i>).

ASOP No. 46—September 2012

Comment	Several commentators were concerned that the ASOP definitions were not consistent with those used by other professional organizations.
Response	The reviewers spent a considerable amount of time researching and discussing the definitions used by professional organizations, but found little consistency between the definitions. For the purpose of this ASOP, the reviewers accepted definitions that would provide clarity to the users of the ASOP and not for any other purpose. Therefore, no further changes were made for this purpose.
Comment	One commentator questioned the need for more than one ASOP covering ERM.
Response	The reviewers have determined that Risk Evaluation in ERM and Risk Treatment in ERM are necessary ASOPs to develop at this time, but anticipate that as ERM practice evolves, the ASB and the ERM Task Force will continue to review the ERM standards to determine if more should be promulgated or if the existing ERM ASOPs should be expanded. Therefore, no changes were made.
Comment	One commentator suggested that in many places throughout the standard wording should be added to emphasize the possibility that interdependencies of risks may change.
Response	The reviewers believe that this suggestion is focused on a technical detail that is not required in an ASOP, and therefore no change was made.
Comment	Several commentators stated that the ASOP should provide more guidance and noted specific areas where they thought guidance should be provided. In many instances, the commentators suggested adding technical details and more specificity, including examples. In addition, one commentator stated that the ASOP did not provide meaningful standards of practice, only a list of considerations.
Response	The reviewers believe the ASOP provides appropriate guidance in light of the current state of ERM. Therefore, no change was made. Other information might be appropriate for a practice note or textbook. It is the understanding of the reviewers that the American Academy of Actuaries' ERM Committee is in the process of preparing a practice note on ERM.
Comment	Some commentators suggested that the standard sometimes used the word “significant” and other times the word “material” when it seemed that the same concept was intended.
Response	The reviewers looked at each instance of the use of either word and made changes to improve clarity.
Comment	One commentator wanted to know how this standard ties to other initiatives such as ORSA and Solvency II.
Response	The standard does not directly tie to these initiatives. Since ERM is evolving, the reviewers are aware that there will be new initiatives in many different areas. The reviewers believe that it is better to provide general guidance now in this ASOP to actuaries dealing with risk evaluation issues rather than wait for these initiatives to be finalized. At some point in the future, there may be a need for a new standard that directly addresses actuarial risk evaluation work specifically for some particular accounting or regulatory need.

ASOP No. 46—September 2012

Comment	Several commentators suggested minor wording changes.
Response	The reviewers looked at each suggestion and made changes where they agree that the clarity of the standard was improved.
Comment	One commentator disagree with the ASOP assertion that “no group has specific professional standards for enterprise risk management work performed by individuals,” specifically referencing ISO 31004.
Response	The reviewers note that this ASOP provides guidance for an actuary performing ERM work, not guidelines for the implementation of ERM as appears to be the objective of ISO 31004. Therefore, no change was made.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Section 1.1, Purpose

Comment	One commentator suggested the ASOP should include “interpreting” risk evaluation systems in its purpose and scope.
Response	The reviewers note that “interpretation” is inherent in performing professional services with respect to risk evaluation and therefore did not expand the examples provided.

Section 1.2, Scope

Comment	One commentator was concerned that the limitation of this standard to risk evaluations performed within an ERM program would produce situations where similar work within and outside of ERM programs are subject to different requirements.
Response	The reviewers note that this standard provides guidance strictly for actuaries performing risk evaluations for the purpose of ERM, and for no other purpose. Other standards provide actuaries with guidance for certain risk evaluations performed for purposes other than ERM. No inappropriate differences in guidance were suggested or known to the reviewers. Therefore, no changes were made.
Comment	Several commentators suggested that modifications to the description of the ERM control cycle were needed.
Response	The reviewers note the ERM control cycle is used as context for this ASOP. It is not meant to be limiting, and incorporates all types of quantitative and qualitative models. Therefore, no change was made.

SECTION 2. DEFINITIONS	
Comment	Several commentators suggested modifications to the definitions. Some of these suggestions were in conflict with each other. Some commentators felt that the definitions should conform to one or multiple sources that, in some cases, are in conflict themselves.
Response	The reviewers spent a considerable amount of time researching and discussing the definitions, and ultimately believe that the purpose of the definitions is to provide clarity to the users of the ASOP. It is not the intention of the ASOP to provide guidance on definitions for usage other than within the context of the standard itself. Therefore, the reviewers made a limited number of edits to the definitions for the purpose of improving clarity.
Comment	Several commentators suggested that the ASOP include additional definitions, such as for “risk transfer,” “reverse stress test,” “ORSA,” and “sensitivity test.”
Response	The reviewers considered the addition of each of these definitions and did not add definitions for these terms for several reasons. “Risk transfer” was used only once in the draft ASOP, within a definition that has since been removed. “Reverse stress test” is also not a term used in the standard. The reviewers believe that an organization’s own risk and solvency assessment (ORSA) is inherent in the risk management control cycle and, as such, is not explicitly referenced within the standard itself. Instead, the regulatory requirement is mentioned in the background. Finally, while “sensitivity testing” is mentioned within the standard, its use relates to gaining comfort with a model itself and therefore the reviewers believe its meaning is widely understood.
Section 2.1, Counterparty Risk	
Comment	Several commentators observed that the term “counterparty risk” was not used within the draft ASOP and recommended deletion.
Response	The reviewers agree and removed the definition.
Section 2.2, Economic Capital	
Comment	Several commentators suggested replacing the language “at a selected confidence level” with “for a selected risk metric,” and one commentator suggested removing the reference to “selected confidence level.”
Response	The reviewers agree and replaced the phrase “over a specified period of time at a selected confidence level” with “for a specified period of time and risk metric.”
Comment	One commentator suggested replacing the word “needed” with “indicated,” while another commentator suggested replacing “needed” with “available.”
Response	The reviewers agree with editing the definition, but instead replaced the term “the amount of capital needed” with “the amount of capital an organization requires” as a more appropriate edit for how the term is used within this ASOP.

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Comment	One commentator suggested including reference to an “economic basis of calculation.”
Response	The reviewers believe the revised definition is appropriate for the use of the term in this ASOP and made no further changes.
Section 2.3, Emerging Risk	
Comment	One commentator suggested that emerging risks are not “new”; rather, they only appear to be new as we gain knowledge of them.
Response	The reviewers believe that certain emerging risks might be new—such as those related to developments in technology—and made no change.
Comment	One commentator suggested that the definition was too limiting, and another suggested additional language to expand the definition.
Response	The reviewers believe the definition is appropriate for the use of the term in this ASOP and made no change.
Section 2.5, Enterprise Risk Management Control Cycle	
Comment	One commentator suggested changing the order of the definition so that risk mitigation preceded risk taking, and inserting “risk avoidance.” Another commentator suggested including the phrase “not necessarily in that order.” A third commentator suggested that the term “control cycle” implies a sequence, and recommended that it be replaced by “process.”
Response	The reviewers edited the definition, replacing “taken” with “accepted or avoided.” While the reviewers agree that, in practice, an ERM process within an organization may be conducted in a different order with multiple levels of iteration, they believe that the revised definition is appropriate for both broadly describing the phases of ERM and for the manner in which the term is used within this ASOP.
Comment	One commentator suggested adding the phrase “risks are monitored and reported as they are taken and as long as they remain an exposure to the organization,” which is a sentence used in the Background.
Response	The reviewers believe the revised definition is appropriate for the use of the term in this ASOP and made no further changes.

Section 2.7, Risk	
Comment	Several commentators thought that the definition of “risk” should also include reference to the opportunity for gain. One commentator also suggested that the definition of risk should be directly tied to the achievement of an objective.
Response	The reviewers spent a considerable amount of time researching and discussing the definition of “risk” both before the release of the exposure draft and since receiving comments. The reviewers decided that the definition of risk should remain focused on “the potential for future losses” since 1) an evaluation of “risk versus reward” implies one-sidedness, and 2) a significant amount of risk evaluation work focuses on tail events. Additionally, the reviewers consider the term “expectations” to be consistent with “objectives.” Therefore, the reviewers believe the current definition is appropriate and made no changes.
Section 2.8, Risk Appetite and Section 2.14, Risk Tolerance	
Comment	One commentator suggested that the word “aggregate” is not necessary in the definition of risk appetite since risk appetite might be further defined by type of risk. Two other commentators questioned the relationship between “risk appetite” and “risk tolerance.”
Response	The reviewers spent a considerable amount of time researching and discussing the definitions of both “risk appetite” and “risk tolerance,” and understand that widely varying definitions for these terms are currently being used by organizations. For the purpose of this ASOP, the reviewers believe that the word “aggregate” is appropriate since risk appetite typically focuses on an organization as a whole, even when that focus relates to an “aggregate” view of a single type of risk. In addition, the reviewers felt the fundamental distinction between “risk appetite” and “risk tolerance” is that an organization’s risk appetite reflects a choice, while their risk tolerance relates to what the organization is able to take, or “capacity.” Therefore, the reviewers believe the current definitions are appropriate and made no changes.
Section 2.12, Risk Mitigation	
Comment	Two commentators suggested replacing “severity” with “impact,” and another suggested adding the phrase “and aids in understanding the frequency and/or severity of the risk assumed.”
Response	The reviewers believe that for purpose of this ASOP, the use of “severity” is appropriate, and that further expansion of the definition might not add additional clarity. Therefore, the reviewers made no change.
Section 2.13, Risk Profile	
Comment	One commentator suggested that the definition reference “scale” and “combination of risks” to ensure that users understand how risk profiles change in response to risks taken.
Response	The reviewers believe that the current definition captures this view, and therefore made no changes to the definition.

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Section 2.15, Scenario Test	
Comment	Several commentators suggested that a scenario test may include measuring the impact of a single event, and one commentator suggested that a scenario test may include testing events that occur sequentially as well as simultaneously.
Response	The reviewers agree, and replaced the phrase “several simultaneously occurring” with “one or several simultaneously or sequentially occurring” possible events.
Section 2.16, Stress Test	
Comment	Two commentators suggested changes to the definition of stress test, broadening the definition to include tests of scenarios. One commentator questioned whether there is a difference between the two definitions.
Response	The reviewers believe that the current definition of stress test captures the distinction between scenario tests and stress tests in a manner that is consistent with how the terms are used within this ASOP, namely that scenario tests focus on testing the impact of possible events, while stress tests focus on the incremental impact of varying underlying assumptions or factors. Therefore, the reviewers did not modify the definition of a stress test.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	Two commentators suggested that “etc.” be removed.
Response	The reviewers agree and removed references to this abbreviation.
Comment	One commentator suggested that “risk management actuaries need to either (1) consider the risk, or (2) document that they have chosen not to consider the risk.”
Response	The reviewers agree with this comment, and believe that considerations are appropriately captured in section 3 and disclosures are captured in section 4.1.6.
Comment	One commentator recommended using “may rely on others who have considered” and “if appropriate” consistently throughout the standard.
Response	The reviewers carefully considered the use of these phrases throughout the standard and believe their current use is appropriate.
Section 3.1, Risk Evaluation	
Comment	Two commentators suggested that there needed to be more clarity around what an actuary “should consider” and “may include.”
Response	The reviewers reviewed and reworded the list of considerations to increase clarity.

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Comment	One commentator suggested changing the heading of section 3.1 from “Risk Evaluation” to “Environmental Scan,” based on the premise that including a general scan of the inner and outer environment of the entity undergoing the risk evaluation is a first step that precedes evaluating the risks associated with the entity.
Response	The list of items in section 3 is intended to serve as general considerations for all risk evaluation work performed in connection with ERM, and does not imply an order of action. Therefore, no changes were made.
Comment	One commentator suggested that “risk evaluation” should be defined.
Response	The reviewers believe that the definition of risk evaluation is widely understood.
Comment	One commentator believed that the criteria in this section and section 3.2, Considerations Related to Risk Evaluation Models, are more geared to the reviewing risk evaluation systems than the other stated purposes of the standard.
Response	The reviewers believe that the criteria identified in these sections are important considerations for all professional services with respect to risk evaluation systems and therefore made no change.
Comment	One commentator stated that section 3.3.1(b) mentions consistency in the measurement of risks, while 3.3.1(c) only mentions that some risks may be best modeled stochastically while others may be best modeled via stress tests. There should be some guidance as to how consistency concerns can be addressed via apparently inconsistent modeling approaches across risks.
Response	The reviewers believe the current wording is appropriate and made no change.
Comment	One commentator recommended deleting “risk context,” and adding “risk profile” and “risk environment” in section 3.1(a).
Response	The reviewers agree and made the change.
Comment	One commentator suggested changing section 3.1(a)(1) as follows: “...the financial strength <u>and flexibility</u> of the organization.” Financial strength relates to what’s on the balance sheet at a particular time, but flexibility includes the ability to raise additional capital.
Response	The reviewers agree and made the change.
Comment	A commentator suggested clarifying who determines financial strength in section 3.1(a)(1).
Response	The reviewers do not believe such clarification was needed and made no change.
Comment	One commentator remarked that section 3.1(a)(3) states that the actuary may rely on management’s opinion of the risk environment, which is redundant with section 3.1, which states the actuary may rely on others for all of section 3.1. It could be interpreted that the actuary may only rely on others for 3.1(a)(3) because the wording is only repeated in that section.
Response	The reviewers reworded section 3.1(a)(3) to increase clarity.

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Comment	One commentator suggested that “risk environment” be defined.
Response	The reviewers included definitions in this standard for those terms it felt needed clarification. In this case, the reviewers considered this recommendation but decided that the term was self-explanatory, and made no change.
Comment	One of the commentators suggested that determining stakeholder interests is impossible and suggested additional guidance if stakeholder interests conflict with risk appetite.
Response	The reviewers note that an actuary “may include” information about stakeholder interests if possible and as appropriate to the assignment. Therefore, no change was made.
Comment	One commentator suggested adding “regulators” as an additional stakeholder given their importance.
Response	The reviewers agree and made the change.
Comment	One commentator felt that sections 3.1(a)(5) and 3.1(b)(2) are redundant, stating “...aren’t all of the risk/reward expectations of all those listed in 3.1(a)(5)... included in the risk appetite of the organization?”
Response	The reviewers note that section 3.1(a)(5) includes both internal and external stakeholders, while 3.1(b)(2) covers the internal risk management system. There could be overlap in some circumstances, but for some organizations, the expectations of stakeholders and what is considered in risk appetite will be different. Therefore, no changes were made.
Comment	One commentator asked what “fungibility of capital” means.
Response	The reviewers believe that this is a common financial term and does not need a definition in the ASOP.
Comment	There were several comments on section 3.1(a)(9). One commentator asked why it is important for the actuary to know the extent to which the organization’s exposures (not risks) are different from its competitors’ in the context of risk evaluation. Another questioned how to assess competition’s risk exposure vs. the organization’s without proprietary information from competitors.
Response	The reviewers believe that competitive differences in risk exposures may provide useful information regarding strategic risks that, in turn, support a robust risk evaluation. The reviewers agree that assessment of the competition’s exposures may be limited to publicly available information, and do not believe the guidance states otherwise. Therefore, no change was made. .
Comment	One commentator recommended including the “risk language” used by an organization as a consideration and definition.
Response	The reviewers believe this topic is inherent in section 3.1(a) and made no change.

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Comment	One commentator suggested removing “a significant inconsistency exists” in section 3.1(c).
Response	The reviewers believe that the current wording expresses the intended meaning and made no change.
Comment	One commentator suggested that section 3.1(c) needed clarification and also suggested that “risk context” be defined.
Response	The reviewers reordered the section to increase clarity. In addition, the term “risk context” has been deleted from the standard.

Section 3.2, Considerations Related to Risk Evaluation Models

Comment	One commentator stated that the inclusion of a section on evaluating risk modeling approaches seems premature.
Response	The reviewers believe that this section provides important guidance for actuaries working with risk evaluation models, and therefore no changes were made.
Comment	One commentator suggested that this section should require models to include the capability of evaluating mitigation steps and sensitivity testing of possible alternative mitigations.
Response	The reviewers believe that this recommendation would make this standard too prescriptive and, therefore, no change was made.
Comment	One commentator suggested the following wording change: <ul style="list-style-type: none">• Section 3.2(a)(5) - [Suggested wording underlined.] “the quality, accuracy, appropriateness, <u>timeliness</u>, and completeness of data underlying the models”
Response	The reviewers agree with the suggestion and made the suggested change.
Comment	One commentator suggested that model “verification” should be included in 3.2.(a)(6).
Response	The reviewers agree and edited the section.
Comment	Several commentators suggested the following wording changes: <ul style="list-style-type: none">• Section 3.2(a)(7) - add “and how those dependencies might change”• Section 3.2(b)(1) - [Suggested new wording underlined] ”...whether the assumptions, <u>including any deviations from the expected</u>, are supportable, <u>appropriate</u> and appropriately documented, and allow for deviations from the expected...”
Response	The reviewers believe the current draft wording is appropriate, and therefore made no change.

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Comment	One commentator asked if we intended to include parameter uncertainty in section 3.2(b)(1).
Response	The reviewers did intend to address parameter uncertainty and believe this was achieved in the current language. Therefore, no further change was made.
Comment	One commentator suggested that sections 3.2(b)(1) and 3.2(b)(3) were redundant.
Response	The reviewers believe that assumptions related to future management actions require specific consideration. Therefore, no change was made.
Section 3.3, Economic Capital	
Comment	One commentator suggested that the terminology “basis of measuring loss” in section 3.3.1(a) was not clear.
Response	The reviewers disagree since several examples were provided. Therefore, no further changes were made.
Comment	One commenter suggested that undiscounted reserves may serve as a source of capital.
Response	The reviewers agree with the comment, but view it as one of many sources of capital and do not believe that it needs special treatment in the standard.
Comment	One commentator noted that, in addition to the risks reflected by the economic capital model, there is a need for the actuary to consider the correlations between those risks.
Response	The reviewers agree with the comment and reworded section 3.3(1)(b) to refer more broadly to risk interdependencies.
Comment	One commentator suggested that the accounting framework needs to be consistent with the primary purpose of the economic capital model.
Response	The reviewers agree and note that this is covered in section 3.3.2. Therefore, no change was made.
Comment	One commentator suggested that stress testing should only apply to capital adequacy.
Response	The reviewers disagree and note that stress testing of growth rates, loss frequency or severity, and many other aspects of the organization’s business which are not related to capital adequacy is appropriate and valuable. Therefore, no changes were made.
Comment	One commentator suggested that use of standard measures should be considered reliance on others.
Response	The reviewers note that reliance on others is covered in section 3.8, and therefore made no change.

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Comment	One commentator suggested that a key consideration for the economic model should include corporate business plans.
Response	The reviewers agree that corporate business plans are important considerations in risk evaluation, and note that this is implicit in section 3.1(a). Therefore, no change was made.
Comment	One commentator recommended removing the expectation in section 3.3.5 that the economic capital model results would be reasonably consistent with “relevant items of the underlying balance sheet and income statements of the organization.”
Response	The reviewers believe that the results of economic capital models should be reasonably consistent with relevant balance sheet or income statement items, and that validation tests should confirm that this occurs. Therefore, no changes were made.
Comment	One commentator suggested replacing the word “reproduces” with “consistent” or “reconciled.”
Response	The reviewers agree and have modified the language from “the model reasonably reproduces” to “the model results are reasonably consistent with.”
Comment	Several commentators suggested adding guidance on “reverse stress testing.”
Response	The reviewers took no action since they believe reverse stress testing falls under the broader category of stress testing.
Comment	One commentator suggested changing the title of this section to Stress Testing since scenario testing is a subset of stress testing.
Response	The reviewers disagree with the suggestion and therefore did not modify the title of the section.
Comment	One commentator suggested removing the following sentence: “These tests are now emerging as a key tool for solvency assessment by regulators.”
Response	The reviewers agree with the suggestion and removed the sentence.
Comment	Several reviewers questioned the use of the term “catastrophic,” indicating that it may imply limiting the analysis to certain types of events or to a single event when multiple events may also stress an organization.
Response	The reviewers agree and changed references from “catastrophic” in sections 3.4.1(b) to “extreme” and removed a reference in 3.4.1(c).
Comment	One commentator recommended specifically mentioning how regulators’ actions change during extreme events.
Response	The reviewers believe that the existing terminology in section 3.4.1(d) (“stakeholders and markets”) is sufficiently broad to be understood to include regulators, and therefore did not make any change.

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Comment	One commentator felt that the actuary might not be able to consider how actions and markets will change under extreme events.
Response	The reviewers agree and modified the language in section 3.4.1(a).
Comment	Two commentators suggested deleting the sentence “In these situations, the actuary should document the assumptions and methodology used” in 3.4.1(g).
Response	The reviewers agree and have removed the sentence.
Comment	One commentator suggested combining the Economic Capital and Scenario/Stress Testing Methods sections.
Response	The reviewers disagree with this recommendation because of significant differences between the topics, and therefore made no change.
Section 3.4, Stress and Scenario Testing	
Comment	One commentator suggested that the introductory paragraph would become dated over time and recommended that the paragraph be revised so that it is neither educational nor a value judgment.
Response	The reviewers accepted this recommendation and modified the wording.
Comment	One commentator suggested that the language in section 3.4.2(a) should be changed to avoid raising potential issue of using the term “forecasts.”
Response	The reviewers agree and have modified the language from “performed with forecasts of” to “performed by modifying.”
Comment	Multiple commentators noted that the language in section 3.4.2(a) implies that only an actuary can do or supervise model combinations.
Response	The reviewers agree and have removed the phrase “manually under the supervision of an actuary.”
Comment	One commentator suggested using the term “interdependencies” instead of “contagion effects” since that term is used throughout the standard.
Response	The reviewers agree and have replaced the term “contagion effects” with “interdependencies.”
Comment	One commentator pointed out that regulators may change capital requirements during times of stress.
Response	The reviewers agree and modified the language in section 3.4.3(c) from “insurance risk based capital limits may be changed” to “regulatory capital limits may be changed.”

Comment	One commentator noted that the actuary should consider the potential for risk mitigations to fail.
Response	The reviewers agree and modified the language in section 3.4.3(d) to include the phrase “or fully effective.”

Section 3.5, Emerging Risks

Comment	One commentator suggested adding recognition of the idea that a part of an emerging risk evaluation may include consideration of whether it might be beneficial to undertake mitigation of the risk.
Response	While they agree, the reviewers believe that risk mitigation is reflected in the forthcoming standard on risk treatment and therefore did not make any change in this section of the standard.
Comment	One commentator recommended that this section be expanded and even tied to the scenario section as scenarios are often used to ‘assess’ emerging risks, issues, and trends.
Response	The reviewers agree that scenarios are often used to assess emerging risks. However, the reviewers also feel that the stress testing section appropriately provides the necessary guidance and does not need to be repeated here. Therefore, no further changes were made.

SECTION 4. COMMUNICATIONS AND DISCLOSURES

Section 4.1, Actuarial Communications

Comment	One commentator suggested adding a requirement that time frame, basis of measuring loss, and confidence interval be disclosed.
Response	The reviewers agree and added a requirement that time frame, basis of measuring loss, and risk metric (which, based on other comments, has replaced the term confidence interval) be disclosed.
Comment	One commentator felt the requirement to disclose changes from prior risk evaluations was not possible in some situations and the wording should be softened.
Response	The reviewers believe that the disclosure of differences from prior risk evaluations is extremely important especially because of the various possible ways that risk can be calculated. Therefore the current language is felt to be appropriate and no change was made. The reviewers also note that this disclosure is required “as appropriate.”
Comment	Several commentators suggested that the requirement to disclose all risks not included and the reason for such was unrealistic.
Response	The reviewers agree and the statement in section 4.1.6 was modified to suggest the disclosure applies to known “material” risks not included.

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Comment	One commentator felt that the phrase “as well as failure of those attempts to manage or mitigate risks” should be added to the end of the sentence in section 4.1.5.
Response	The reviewers believe that the current language encourages a reasonable level of disclosure and therefore did not make the change.
Comment	One commentator questioned why only ASOP Nos. 23, 38, <i>Using Models Outside the Actuary’s Area of Expertise (Property and Casualty)</i> , and 41, <i>Actuarial Communications</i> , are referenced.
Response	The reviewers believe these three ASOPs are often relevant. However, this does not mean that an actuary should not consider other ASOPs, if relevant.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 47**

Risk Treatment in Enterprise Risk Management

**Developed by the
Enterprise Risk Management Task Force of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2012**

Doc. No. 169

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December 2012

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Risk Treatment in Enterprise Risk Management

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 47

This document contains the final version of ASOP No. 47, *Risk Treatment in Enterprise Risk Management*.

Background

Enterprise Risk Management (ERM) has been defined by the Casualty Actuarial Society in 2003 as follows:

The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

This definition was also adopted by the Society of Actuaries in 2005.

Enterprise Risk Management is a rapidly emerging specialty within the actuarial community and with the new CERA risk management educational certification, could well become an area of practice for actuaries with no tie to traditional actuarial work. The CERA is a globally-recognized ERM designation supported by actuarial organizations in 12 countries with rigorous educational programs.

The ERM Task Force was formed in the fall of 2009 to revisit the need for ERM standards that were previously addressed by an earlier task force in 2007. In June 2010, the Task Force presented findings to the ASB and was then asked to go forward with the development of standards for two broad topics relating to ERM, Risk Evaluation and Risk Treatment.

In March of 2011, discussion drafts for two topics were posted to the ASB website on risk evaluation and risk treatment. The ERM Task Force reviewed the comments received and based on those comments, began work on the development of exposure drafts of standards on risk evaluation and risk treatment for presentation to the ASB.

This ASOP considers the topic of risk treatment. The process of risk treatment is a fundamental part of risk management systems that are found in organizations. In this context, risk is intended to mean the potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.

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This standard applies to enterprise risk treatment activities performed by actuaries. Some organizations will face requirements and requests for assessment of the risk treatment part of the risk management system in order to evaluate whether their risk management systems are operating at a level that meets or exceeds professional standards. Regulators in some industries may want similar evaluations.

This standard, along with ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, is intended to cover the risk evaluation and risk treatment activities within enterprise risk management work but does not cover other ERM practices that are performed by insurers, pension plans, other financial service firms, and other businesses or organizations. These two topics were chosen because they cover the most common actuarial services performed within enterprise risk management systems of organizations. In the future, other standards may provide guidance for other aspects of actuarial professional services in ERM.

These standards, as with all standards of practice, apply to the actions of individual actuaries and not to their organizations, employers or clients.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in June 2012 with a comment deadline of September 10, 2012. Eight comment letters were received and considered in developing modifications that were reflected in this final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard and did not result in substantive changes to the standard.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in December 2012 to adopt this standard.

ASOP No. 47—December 2012

Enterprise Risk Management Task Force

David N. Ingram, Chairperson	
Maryellen J. Coggins	David Y. Rogers
Eugene C. Connell	Max J. Rudolph
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Actuarial Standards Board

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 47

RISK TREATMENT IN ENTERPRISE RISK MANAGEMENT

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk treatment within a risk management system, including designing, implementing, using, maintaining, and reviewing those systems.
- 1.2 **Scope**—This standard applies to actuaries when performing professional services with respect to risk treatment for the purposes of enterprise risk management (ERM).

Risk treatment is often performed as part of an ERM control cycle. Within a typical ERM control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization.

This standard focuses on four aspects of risk treatment: determining risk tolerance, choosing risk appetites, setting risk limits, and performing risk mitigation activities. Guidance for activities related to risk evaluation is addressed in ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

This standard does not apply to actuaries when performing professional services with respect to risk treatment that are not for the purposes of ERM. Examples of risk treatment services that may be performed for purposes other than ERM include designing a health insurance program and executing a product-specific reinsurance or hedging program.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard is effective for any professional services with respect to risk treatment in enterprise risk management performed on or after May 1, 2013.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Basis Risk**—The residual risk that results from an imperfect risk offset or transfer process. For example, basis risk may arise from a hedge that pays off based upon an index while the exposure is an investment in a managed selection of individual stocks, or from a capital market hedge based upon industry-wide losses used to offset an insurer’s specific storm exposure.
- 2.2 **Counterparty Risk**—The risk that the party providing a risk offset or accepting a risk transfer does not fulfill its obligations.
- 2.3 **Enterprise Risk Management**—The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization’s short- and long-term value to its stakeholders.
- 2.4 **Enterprise Risk Management Control Cycle**—The continuing process by which risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached.
- 2.5 **Organization**—The entity for which ERM is being performed. Examples include public or private companies, government entities, and associations, whether for profit or not for profit.
- 2.6 **Risk**—The potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.
- 2.7 **Risk Appetite**—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.
- 2.8 **Risk Limit**—A threshold used to monitor the actual risk exposure of a specific unit or units of the organization to ensure that the level of aggregate risk remains within the risk tolerance.
- 2.9 **Risk Management System**—A combination of practices, tools and methodologies that an organization uses to identify, assess, measure, mitigate, and manage the risks it faces during the course of conducting its business.
- 2.10 **Risk Mitigation**—An action that reduces the frequency or severity of a risk.

- 2.11 **Risk Profile**—The risks to which an organization is exposed over a specified period of time.
- 2.12 **Risk Tolerance**—The aggregate risk-taking capacity of an organization.
- 2.13 **Risk Treatment**—The process of selecting actions and making decisions to transfer, retain, limit, and avoid risk. This can include determining risk tolerance, choosing risk appetites, setting risk limits, performing risk mitigation activities, and optimizing organizational objectives relative to risk.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Risk Treatment**—An actuary may be called upon to perform a variety of risk treatment activities. In performing services related to risk treatment, the actuary should consider, or may rely on others who have considered, the following:
- a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment. Such information may include the following:
 1. the financial flexibility of the organization;
 2. the nature, scale and complexity of the risks faced by the organization;
 3. the potential differences between the current and long-term risk environments;
 4. the organization's strategic goals, including goals for the level and volatility of profits, both short term and long term;
 5. the interests, including the risk/reward expectations, of the relevant stakeholders. These stakeholders may include some or all of the following: owners, boards of directors, management, customers, partners, employees, regulators and others potentially impacted by the organization's management of risk;
 6. regulatory or rating agency criteria for risk levels and the implications of potential risk levels on the continuation of business operations as reflected in ratings or other external measures of security;
 7. the degree to which the organization's different risks interact with one another, actual and perceived diversification benefits, and dependencies or correlations of the different risks;

8. limitations to the fungibility of capital across the organization, under both normal and stressed conditions; and
9. the extent to which the organization's exposure to risks may differ from the exposures of its competitors.

The actuary may rely on management's opinions of the risk environment, may form an independent opinion of the risk environment, may rely on a third party's evaluation of the risk environment, or may infer a risk environment from current conditions (such as market prices and political climate, among others).

- b. information about the organization's own risk management system as appropriate to the assignment. Such information may include the following:
 1. the risk tolerance of the organization;
 2. the risk appetite of the organization. This may be explicit or inferred from objectives of the organization including those related to solvency, market confidence, earnings expectations, or other objectives;
 3. the components of the organization's enterprise risk management control cycle;
 4. the knowledge and experience of the management and the board of directors regarding risk assessment and risk management; and
 5. the actual execution of the organization's enterprise risk management control cycle, including how unexpected outcomes are acted upon.
- c. the relationship between the organization's financial strength, risk profile, and risk environment as identified in (a) above, and the organization's risk management system as identified in (b) above. If, in the actuary's professional judgment, as appropriate to the assignment, a significant inconsistency exists, then that inconsistency should be considered in the risk treatment activities and communicated by the actuary.
- d. the intended purpose and uses of the actuarial work product.

- 3.2 **Using Models in Risk Treatment**—An actuary may use models to provide support for risk treatment decisions, for example, the setting of specific risk tolerance or the selection of a risk mitigation strategy. When using models in risk treatment, the actuary should consider the inherent statistical, theoretical, and other limitations of the models. Such models are usually risk evaluation models and, as such, the actuary designing or implementing models for risk treatment purposes should refer to ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

3.3 **Organizational Risk Parameters of Risk Tolerance, Risk Appetite, and Risk Limits**—An actuary may be called upon to review or recommend organizational risk parameters, or may be involved in designing, operating, or using a system to monitor risks relative to these parameters.

In performing services related to these parameters, as appropriate to the actuary’s assignment, the actuary should consider, or may rely on others who have considered, the following:

- a. the financial and non-financial benefits associated with each planned, risk-taking activity and the aggregation of those activities;
- b. the degree of concentration of the risks of the organization;
- c. the opportunities available to mitigate breaches of risk limits and risk tolerance, as well as the cost and effectiveness of such mitigation strategies;
- d. regulatory or accounting constraints that may affect the risk environment;
- e. the relationships between the risk tolerance, risk appetite, and risk limits; and
- f. the historical volatility of the organization’s results in the context of its current risk profile.

3.4 **Risk Mitigation**—An actuary may be called upon to review or recommend an organization’s risk mitigation strategy, or may be involved in designing or using processes to mitigate risks relative to the organization’s risk tolerance, risk appetite, or risk limits.

In performing services related to risk mitigation, the actuary should consider, or may rely on others who have considered, the following:

- a. information relating to qualitative aspects of the organization as appropriate to the actuary’s assignment. Such information may include the following:
 1. the resilience of the organization under duress caused by common fluctuations in experience as well as from extreme adverse conditions;
 2. the operational capabilities of the organization needed to implement the risk mitigation strategy; and
 3. the potential risk to the organization’s reputation as a result of the risk mitigation strategy.

- b. information relating to the cost of, potential effectiveness of, and constraints upon risk mitigation activities as appropriate to the assignment. Such information may include the following:
1. the availability of risk mitigation instruments both in the current and future environments;
 2. the counterparty credit risk inherent in the risk mitigation instruments and the organization's ability to monitor and mitigate the counterparty risk over time;
 3. the nature and degree of the basis risk that is inherent in the risk mitigation instruments;
 4. the degree of confidence that the risk mitigation process can be maintained or repeated over time;
 5. the availability of data on current and potential future risk positions, before and after mitigation;
 6. the variability of outcomes after risk mitigation;
 7. the accounting treatment of the gross and net risk positions related to risk mitigation;
 8. regulatory constraints on risk mitigation options; and
 9. the granularity of modeling needed to capture the effects of the risk mitigation processes as well as the practicalities of achieving that granularity.
- 3.5 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.
- 3.6 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communication**—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the risk treatment activities and refer to ASOP Nos. 23 and 41, and, if applicable, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*. In particular, consistent with the intended use or purpose, the actuary should disclose the following as appropriate:

- 4.1.1 **Risk Treatment**—The actuary should disclose significant inconsistencies between a) the organization’s financial strength, risk profile, and risk environment, and b) the organization’s risk management system that have been considered in the risk treatment activities as described in section 3.1.
 - 4.1.2 **Model Limitations**—The actuary should disclose any known significant limitations of the models used in risk treatment, and the impact of those limitations on risk treatment activities and decisions as described in section 3.2.
 - 4.1.3 **Risk Tolerance, Risk Appetite, and Risk Limits**—The actuary should disclose considerations important to conclusions reached when reviewing or recommending these organizational risk parameters, or when designing, operating, or using a system to monitor risks as described in section 3.3.
 - 4.1.4 **Risk Mitigation**—The actuary should disclose considerations important to conclusions reached when reviewing or recommending an organization’s risk mitigation strategy, or when designing processes to mitigate risks relative to the organization’s risk tolerance, risk appetite, or risk limits as described in section 3.4.
 - 4.1.5 **Changes in System/Process**—The actuary should disclose any material changes in the system, process, methodology, or assumptions from those previously used for the same type of risk treatment activity. The general effects of any such changes should be disclosed in words or by numerical data, as appropriate.
 - 4.1.6 **Assumptions**—The actuary should disclose the significant assumptions used in the risk treatment activity such as accounting constructs, economic values, and stand-alone or portfolio views of risk. The actuary should disclose the different target criteria underlying the risk treatment activity (solvency, regulatory standards, earnings volatility, reputation damage, etc.). The actuary should disclose any other significant assumptions used in the analysis, including anticipated future actions by management to manage or mitigate risks identified by the actuary.
- 4.2 **Deviation from Guidance in the Standard**—If the actuary departs from the guidance set forth in this standard, the actuary should include the following where applicable:
 - a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - b. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

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- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

Enterprise Risk Management (ERM) has been a developing area of practice for actuaries for over 10 years. In 2001, the Casualty Actuarial Society (CAS) Advisory Committee on Enterprise Risk Management produced a report that recommended areas of research and education that were needed by actuaries entering this emerging field. In 2002, the Society of Actuaries (SOA) formed a Risk Management Task Force that wrote guides to Economic Capital and Enterprise Risk Management practice as well as initiating several research projects. In 2004, the task force evolved into a new Risk Management Section of the Society of Actuaries and became the first and largest joint activity in 2005 when it became the Joint Risk Management Section co-sponsored by the SOA, CAS, and the Canadian Institute of Actuaries (CIA). The Joint Risk Management Section has been tightly linked with an annual ERM Symposium event that is a joint activity of the SOA, CAS, CIA, and the Professional Risk Managers' International Association (PRMIA), a non-actuarial risk management organization.

Enterprise Risk Management is also becoming a standard practice at many organizations and its use has been steadily spreading. Poor ERM practice has been blamed by many for some or all of the ills of the 2008-2009 Global Financial Crisis. The G20 heads of state have called for significant improvements to risk management practices in the financial sector and have charged the Financial Stability Board and the International Monetary Fund to take steps to promote and sometimes require better risk management practices from financial sector firms. The International Association of Insurance Supervisors has responded to that by promulgating an Insurance Core Principle paper on Enterprise Risk Management, requiring insurance regulators to promote ERM practice and self assessment of solvency needs by insurers globally. The National Association of Insurance Commissioners has developed a requirement for an Own Risk and Solvency Assessment (ORSA) process that includes an assessment of risk management practices for larger insurers and the New York State Insurance Department (December 2011) published a requirement that all insurers domiciled in the state must adopt an Enterprise Risk Management regime.

At the most fundamental level, Enterprise Risk Management can be understood as a control cycle. Within a typical risk management control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization. This cycle can be applied to specific risks within a part of an organization or to an aggregation of all risks at the enterprise level.

Risk evaluation and risk treatment have long been a part of actuarial practice. Actuarial risk evaluations were long used by insurers to assess their capital needs and pricing for risks.

Actuarial risk evaluations have also long been used and continue to be the objective functions in risk mitigation activities such as reinsurance, asset liability management and hedging within risk treatment programs. Risk evaluation is a key activity of the new ERM practice. An economic capital model has become a new standard tool for ERM programs. Stress tests are another risk evaluation process that has long been used by actuaries that has emerged as a primary tool for ERM. The risk evaluation activities of actuaries in all of these situations are the subject of Actuarial Standard of Practice No. 46, *Risk Evaluation in Enterprise Risk Management*.

The risk treatment activities of actuaries are the subject of this standard. Actuaries have provided analytical support and guidance in the development of informal or implicit risk appetites long before that phrase was in wide usage. For decades, actuaries have been providing support and guidance for decisions involving risk mitigation activities such as reinsurance, asset liability management and, more recently, hedging within risk treatment programs. Risk treatment is a key activity of ERM practice. Actuaries are taking more prominent roles in the development of articulated risk tolerance, appetite, and limits as well as becoming more intimately involved in risk mitigation activities.

Current Practices

Actuaries often have a central role in the operation of the control cycle for individual risks including insurance risk, equity risk, credit risk, interest rate risk, operational risk and liquidity risk. Within those control cycles, actuaries may use tools and processes such as reinsurance, hedging and duration/convexity matching as well as the more general risk mitigation processes such as underwriting, risk selection, and risk avoidance. In many organizations, actuaries are not the only risk managers. Actuaries might be a part of a multi-disciplinary team or may be managing one risk while other teams, including non-actuaries, manage other risks.

At the enterprise level, actuaries often participate with top management of the organization to manage the control cycle for the aggregate risk of the organization. They might focus on the relationship between the actual risk profile, the risk tolerance, and the risk appetite of the organization. In addition, strategic risk will be managed at this level along with reputational risk. In almost all cases, actuaries work with non-actuarial experts to manage these enterprise level risks.

Actuaries are also called upon to review risk treatment processes performed by actuaries or by other professionals; to provide or review the organization's risk tolerance, risk appetite, or risk limits; and to document the underlying assumptions. An actuary might be asked to analyze the impact of a strategic decision on an organization's risk treatment processes, recommend allocations of risk appetite to units within an organization, or opine on the appropriateness of an organization's risk appetite relative to the organization's risk profile and financial strength.

In most organizations, risk appetite or tolerance are key metrics that guide the risk treatment process. However, the terms risk tolerance and risk appetite do not have standardized definitions. These terms usually relate to the amount and types of risk that an organization is able to take and is planning to take consistent with the resources and objectives of the organization. In some organizations, these terms are solely used with regard to the aggregate risk of the entire

organization, but in others, the terms are applied to broad types of risks or even to individual transactions. In some organizations, one of these two terms is a subset of the other, while in others, the terms refer to intersecting sets of risks where each set has elements that are not common to the other.

In working with risk treatment, the organization will usually want to consider both the threats to the organizations that are posed by the risks taken as well as the opportunities for gains that are associated with those risks, considering the costs and benefits of any risk mitigation activities under consideration or in use. The actuary is often asked to help with the following:

1. the strategic evaluation of potential opportunities and the risks associated with them. This would include strategic approaches to risk treatment that change both the opportunity and risk sides of expectations.
2. tactical choices of potential actions within the strategic direction, considering the risks and opportunities of each action as well as risk mitigation choices.
3. tactical choices of potential actions that can be taken to reduce the risk of actions that have already been taken. This often includes evaluation of the trade-offs of various risk mitigation alternatives.
4. selecting and implementing actions to reduce the severity of losses for an emerging adverse event. This often includes a cost benefit analysis of potential actions.

Appendix 2

Comments on the Exposure Draft and Responses

The first exposure draft of this ASOP, *Risk Treatment in Enterprise Risk Management*, was issued in June 2012 with a comment deadline of September 10, 2012. Eight comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Enterprise Risk Management Task Force of the Actuarial Standards Board carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Task Force and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

TRANSMITTAL MEMORANDUM	
Comment	One commentator expressed the view that the task force achieved the objectives identified in its list of four questions for reviewers and that the ability to rely on non-actuaries as part of the risk treatment process is critical to successful implementation.
Response	The reviewers thank the commentator for sharing this view.
GENERAL COMMENTS	
Comment	One commentator stated that since this document defines risk as only being “the potential of future losses or shortfalls,” it neglects consideration of risk versus reward.
Response	The reviewers spent a considerable amount of time researching and discussing the definition of “risk,” both before the release of the exposure draft and since receiving comments. The reviewers decided that the definition of risk should remain focused on “the potential for future losses” since 1) an evaluation of “risk versus reward” implies one-sidedness, and 2) a significant amount of risk evaluation work focuses on tail events. Therefore, the reviewers believe the current definition is appropriate and made no changes.

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Comment	<p>Two commentators remarked on the use of the terms “should” and “may.”</p> <ul style="list-style-type: none">• The first commentator suggested using “should, if appropriate” throughout the document unless there is an overriding reason to do otherwise. The use of “should” alone can be very prescriptive and burdensome and sets the bar too high for risk treatment in ERM.• The second commentator believed that the guidance here is insufficient to aid practice because it is too broad and hence requires the use of the phrase “may include” too frequently. This commentator feels if the scope is narrowed, then “may include” could be changed to “should consider” in several paragraphs. On a final note, this commentator stated, “the current scope probably forced this draft ASOP into a general principles format rather than an operational guidance format.”
Response	<p>The reviewers examined the use of “may” and “should” throughout the standard, and made several changes.</p>
Comment	<p>One commentator found the ASOP to be too generic to provide guidance in certain situations.</p>
Response	<p>The reviewers believe the ASOP provides appropriate guidance in light of the current state of ERM. Therefore, no change was made.</p>
Comment	<p>One commentator did not disagree with any of the principles expressed in the document, but strongly believes that ERM is not exclusively an actuarial process and, therefore, extends beyond a purely actuarial function.</p>
Response	<p>The reviewers note that ASOPs apply to individual actuaries practicing in the area covered by the ASOP and do not require the role to be one that is only performed by actuaries.</p>
Comment	<p>One commentator believes that Chief Risk Officers (CROs) who are also actuaries will be at a disadvantage under this standard because they will have to provide different levels of documentation and disclosure than a non-actuary performing that same role. In addition, the commentator expressed concerns regarding how a CRO/actuary will need to deal with work done by non-actuaries on his/her staff.</p>
Response	<p>The reviewers believe the documentation and disclosures called for by this standard represent appropriate practice and hence will help ensure appropriate practice by actuaries. In addition, the standard specifically allows reliance on others, including non-actuaries on staff, in performing certain roles.</p>

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Comment	One commentator believes that it is premature to develop a standard related to ERM due to the evolving nature of ERM, and that expressing the ERM principles in the form of a guidance document may be more appropriate at this time.
Response	The reviewers note that some actuaries have been practicing in the ERM field for many years. While we recognize that this is a changing area of practice, we believe it is appropriate to provide guidance to members of the actuarial profession at this time.
Comment	One commentator believes that this particular ASOP should provide more clarity with respect to how outside actuaries who are relied on by companies for ERM expertise could be affected. The ASOP as written suggests that a third party actuary who provides risk treatment analysis would be subject to the ERM ASOPs that, in turn, could require the company to state a reliance on the third party when reporting risk analysis. While this may be the ASOP's intent, the relationship expectation between a company and its third parties should be more clearly detailed.
Response	The reviewers note that this ASOP provides guidance to individual actuaries, not companies.
Comment	One of the commentators states this standard would be adding to existing and growing compliance requirements in the ERM landscape. This commentator worries that all of these requirements require CROs to spend more time understanding reporting requirements rather than actually managing our companies' risks and that promulgation of actuarial standards for ERM may result in other professional associations providing similar, but conflicting ERM standards (for example, the American Institute of Certified Public Accountants, the Chartered Financial Analyst Institute or others).
Response	The reviewers believe that the standard will eventually ease the compliance burden of actuarial professionals and note that this standard was prepared with an eye to the current requirements that exist or are under development.
Comment	Several commentators suggested modifying language to increase the consistency with ASOP No. 46, <i>Risk Evaluation in Enterprise Risk Management</i> .
Response	The reviewers agree, and made changes throughout the standard to increase consistency with ASOP No. 46.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Comment	One commentator pointed out that in section 1.1, “risk treatment system” is not defined and suggested changing the text to “risk treatment portion of the risk management system.”
Response	The reviewers agree and removed the reference to “risk treatment systems.”
Comment	Several commentators suggested modification to the description of the ERM control cycle were needed, including the order in which risk management activities occur.
Response	The reviewers note the ERM control cycle is used as a context for this ASOP. It is not meant to be limiting, or suggest a fixed sequence of events. Therefore, no change was made.

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SECTION 2. DEFINITIONS	
Comment	One of the commentators felt that the definition of “counterparty risk” may be too limited, stating, this risk includes a variety of types including, but not limited to, items such as bond redemptions, credit arrangements, and vendor relationships.
Response	The reviewers believe that the current definition incorporates these types of risk and therefore made no change.
Comment	One reviewer found the second sentence in the definition of “enterprise risk management control cycle” unclear.
Response	The reviewers modified the definition to be consistent with the definition of “enterprise risk management control cycle” in ASOP No. 46.
Comment	Several commentators asked if the term “risk profile” should be included.
Response	The reviewers agree and inserted the definition for “risk profile” as defined in ASOP No. 46.
Comment	Many commentators had remarks on the definitions of “risk appetite,” “risk tolerance,” and “risk limit.” Many felt that the definitions were unclear or duplicative. Others stated that these definitions were not the same as those used for similar terms in other documents.
Response	The reviewers researched the definitions of “risk appetite,” “risk tolerance,” and “risk limit” and understand that widely varying definitions for these terms are currently being used by organizations. In addition, the reviewers note that the purpose of the definitions is to provide clarity to the users of the ASOP. It is not the intention of the ASOP to provide guidance on definitions for usage other than within the context of the standard itself. Therefore, the reviewers did not make changes to these definitions.
Comment	One commentator stated, with respect to the definition of “risk mitigation,” that all risk treatment activities effectively seek to reduce frequency or severity. For example, setting a risk limit is one form of risk mitigation. Based on the use of the term in section 3.4, it seems like the definition of risk mitigation is more focused on the treatment of risks that either already transferred to the organization or are planned on being transferred to the organization.
Response	The reviewers disagreed and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator felt that sections 3.1 and 3.3 exhibited a high degree of overlap.
Response	The reviewers agree and revised the introductions to sections 3.1 and 3.3 to improve clarity.
Comment	One commentator recommended language to clarify section 3.1(a).
Response	The reviewers modified the section to be consistent with ASOP No. 46.
Comment	One commentator suggested including “business model” in section 3.1(a).
Response	The reviewers believe that “business model” is included within “strategic goals” in section 3.1(a)(4) and, therefore, made no change.

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Comment	There were several suggestions for improving subsections of section 3.1(a), including: removing “current and potential future” in section 3.1(a)(1), adding “those regarding” before “the level” in section 3.1(a)(4), and adding language to address the limitations of the fungibility of capital during times of stress in section 3.1(a)(8).
Response	The reviewers agree and made appropriate changes to these sections.
Comment	One commentator suggested adding “counterparties” to the list of stakeholders in section 3.1(a)(5) and another noted that expected values and volatility should also be considered any time correlation is considered in section 3.1(a)(7).
Response	The reviewers note that the list in section 3.1(a)(5) is not intended to be comprehensive. The reviewers believe the current language in these sections is sufficiently clear and therefore made no changes.
Comment	One commentator suggested moving section 3.1(b)(4) to section 3.4(b).
Response	The reviewers agree and moved the item to the appropriate section.
Comment	One commentator suggested that the language “potential future variability of the costs and benefits” in section 3.1(b)(4) is “too open-ended.”
Response	The reviewers agree and changed the language to “the variability of outcomes after risk mitigation” to section 3.1(b)(4), which is now in section 3.4(b).
Comment	One commentator suggested deleting section 3.3(a) and adding “and the aggregation of those activities” at the end of section 3.3(b).
Response	The reviewers agree and made the changes.
Comment	Three commentators recommended changes in the wording of section 3.4 to improve clarity.
Response	The reviewers made minor changes to this section to improve clarity.
Comment	One commentator suggested that section 3.4(b) should include regulatory constraints on risk treatment options.
Response	The reviewers agree and added “regulatory constraints on risk mitigation options.”
Comment	One commentator suggested that section 3.4(b) should mention the “sensitivity of risk treatment options to changing conditions.”
Response	The reviewers agree and added “the variability of outcomes after risk mitigation.”

SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Comment	One commentator recommended that section 4.1.1 give guidance for the situation of a new actuary stepping into a role where contact with the prior person in the role is limited. The commentator felt that the words “as appropriate” do not give sufficient guidance as to how to handle successor issues where the predecessor is not available.
Response	While the reviewers agree that this situation is challenging, the reviewers believe that disclosing the impact of material changes in systems, process, methodology, and assumptions is important, and the term “as appropriate” allows for the reasonable use of professional judgment when making these disclosures.



**Actuarial Standard
of Practice
No. 48**

Life Settlements Mortality

**Developed by the
Life Settlements Mortality Task Force of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2013**

Doc. No. 175

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TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Reporting and Validation of Mortality used in Life Settlements Investments

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice No. 48

This document contains the final version of ASOP No. 48, *Life Settlements Mortality*.

Background

The life settlements market arose from the viatical settlements market, which grew quickly in the 1980s. Actuaries are involved in various aspects of the market, including working with Life Expectancy (LE) providers to establish appropriate survival curves for risk appraisal, determining a value for a buyer who wishes to purchase a specific life insurance policy or portfolio, and valuing the policies in a portfolio for financial reporting purposes. An understanding of mortality assumptions and of how individual risk assessment affects the mortality assumptions for individual lives is critical to a proper actuarial valuation and risk analysis. To date, actuarial practices have varied widely in this market, and there are no specific regulatory standards defining life settlements mortality tables or assumptions.

The life settlements market has demanded actual-to-expected (A/E) results from the LE providers, but in the absence of specific guidelines and disclosures, practices for calculating A/E results have varied widely. A limited number of states require LE providers to file A/E ratios, but again, lack of specific guidelines has led to concerns with mortality tables and methodologies used. At issue are survival curves defined for exposure measurement and methodologies for adjusting such curves to reflect individual risk assessments. Also, measurement of exposures based on multiple underwritings has posed significant difficulties.

Exposure Draft

In May 2013, the ASB approved the exposure draft with a comment deadline of July 31, 2013. Ten comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2. The majority of commentators supported the effort to issue this ASOP, although a few comments indicated a concern with the scope of the ASOP, and one commentator believed this ASOP should not be issued.

Changes made to the final standard in response to the comment letters include the following:

1. Sections 2.16, Mean Life Expectancy, and 2.17, Median Life Expectancy, were revised to

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remove examples of formulas that could be used to calculate mean and median life expectancy.

2. Section 2.20, Mortality Assumption, was revised to include mortality rates and survival curves period by period. Survival curves are commonly used in the life settlements market to illustrate the mortality assumption.
3. Section 4.1, Disclosures, was revised after considering the feedback on a question raised in the exposure draft transmittal letter to require the actuary to disclose: a description of how the mortality assumption was developed and how the mortality assumption differs from that of the life expectancy provider, a description of how multiple life expectancy evaluations are handled (previously in section 4.2(f)), and the reason for choosing an IBNR assumption (if any).
4. Section 4.2, Disclosures when Performing A/E Analysis, was revised to allow the actuary to determine whether presentation of historical A/E results is appropriate with appropriate disclosure if they are not presented.

Please see appendix 2 for a detailed discussion of the comments received and the reviewers' responses.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in December 2013 to adopt this standard.

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Life Settlements Mortality Task Force

Timothy A. DeMars, Chairperson

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 48

LIFE SETTLEMENTS MORTALITY

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice provides guidance to actuaries developing and evaluating **mortality assumptions** and evaluating mortality experience associated with **life settlements**.
- 1.2 **Scope**—This standard applies to actuaries performing professional services, when reporting on or evaluating mortality experience with respect to **life settlements** or when developing, analyzing, or using **mortality assumptions** with respect to **life settlements**.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.
- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work performed on or after April 30, 2014.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actual-to-Expected (A/E) Analysis**—The process of calculating and analyzing **A/E ratios** over a selected time period; for example, across different ages, genders, and **durations**. This is also known as an A/E study.
- 2.2 **Actual-to-Expected Ratio**—Actual deaths (either face amount or number of lives) in a group of lives being evaluated, over a specified period divided by the **expected deaths** over the same period.
- 2.3 **Debits and Credits**—The components of a system used by underwriters to determine a set of **mortality multiples** to apply to a base mortality table. Debits increase the **mortality multiple** due to various **impairments** that an **insured** may have; credits reduce the **mortality multiple** due to good health characteristics.

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- 2.4 **Duration**—The length of time since a **life expectancy** estimate was issued.
- 2.5 **Expected Deaths**—The number of deaths statistically expected in a given time interval.
- 2.6 **Graduation**—The process of making adjustments to experience results in order to have a smooth progression in the mortality rates over the whole age range.
- 2.7 **Historical A/E Mortality Basis**—**Mortality assumptions** developed from a base mortality table using information such as **underwriting** multipliers, improvement factors, medical records, and other pertinent information relevant to the individual life expectancies as of their associated **underwriting** dates.
- 2.8 **Impaired Mortality**—A **mortality assumption** that has been adjusted for **impairments**.
- 2.9 **Impairment**—A health factor or condition that tends to increase an **insured's** probability of death.
- 2.10 **Incurred but not Reported (IBNR) Deaths**—Adjustment to observed deaths in a given time period to account for deaths that have occurred but have not been reported due to the time lag in reporting systems or errors and incomplete information available from reporting sources regarding deaths.
- 2.11 **Incurred Death**—A death occurring during a period of exposure being analyzed, whether reported during that period or not.
- 2.12 **Insured**—An individual whose life is covered by a life insurance policy.
- 2.13 **Life Expectancy (LE)**—The expected future lifetime of an **insured**. Two primary types of life expectancies, mean and median, are reported by **LE providers** in the **life settlements** market.
- 2.14 **Life Expectancy Provider (LE Provider)**—An entity that applies medical **underwriting** analysis to determine a **mortality assumption** or **life expectancy**.
- 2.15 **Life Settlement**—The life insurance policy or policies sold to an investor. The term “life settlement” includes viatical and other life settlements. Generally, a viatical life settlement is any life settlement where the **insured** has a **life expectancy** of less than two to three years, depending on state regulation.
- 2.16 **Mean Life Expectancy**—The average **life expectancy** based on the assumed **survival curve**.
- 2.17 **Median Life Expectancy**—The point in time at which, based on the assumed **survival curve**, there is a 50% probability that the person will still be alive.

- 2.18 **Modification Factor**—A factor that is used to adjust standard mortality to reflect rating classification. This may include items such as flat extras, mortality multiples, and age ratings.
- 2.19 **Modified A/E Mortality Basis**—**Mortality assumptions** other than the **historical A/E mortality basis**. Use of this basis may result in **life expectancy** estimates that differ from those originally provided.
- 2.20 **Mortality Assumption**—A set of values representing mortality rates or the survival curve period by period. This may reflect an assumption of future mortality improvement or deterioration or **modification factors**. This term may apply to either a single **insured** or group of **insureds**.
- 2.21 **Mortality Multiple**—A **modification factor** typically determined from a **debit/credit underwriting** methodology.
- 2.22 **Survival Curve**—The probability data set representing the assumed probability of survival to the end of every period in the future for an **insured**.
- 2.23 **Underwriting**—The process of evaluating medical and other information received on a given **insured** to determine **modification factors** reflecting risk classification for that **insured**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Purpose of the Assignment**—The actuary should understand the purpose of the assignment and be familiar with any regulatory or accounting standards that may have a bearing on the actuary’s work product. Assignments that may result in different sets of **mortality assumptions** include fair value valuation (for example, under Accounting Standards Codification 820, *Fair Value Measurements and Disclosures*) and performing or using an **A/E study**.
- 3.2 **Required Knowledge**—The actuary should be reasonably knowledgeable about relevant aspects of mortality table construction, exposure methods, mortality improvement, older age and **impaired mortality, graduation**, and related issues.
- 3.3 **Developing Mortality Assumptions**—When an actuary is developing **mortality assumptions**, the following apply.
- 3.3.1 **Base Mortality Table Selection**—The actuary should select a base mortality table that is appropriate for the purpose of the assignment. The actuary should choose a table (which may be a combination of tables) that in the actuary’s professional judgment reflects the characteristics of the underlying population. The actuary may use credible data to create new mortality tables if existing tables do not adequately fit the underlying population. If the actuary uses a mortality table prescribed by another party or applicable law, the actuary should refer to ASOP

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No. 41, *Actuarial Communications*, section 3.4.4, and the disclosures in sections 4.3(a) and (b) of this ASOP.

- 3.3.2 **Mortality Table Modifications**—The actuary should consider whether modifications to the base mortality table(s) are needed to fit the population being examined. In making these modifications, the actuary should consider items that may lead to a differentiation in mortality, such as socio-economic effect (i.e., a tendency for mortality rates to differ based on sociologic and economic factors), antiselection, selection period, **impairment(s)**, **impairment** level, marketing methods, policies settled versus policies evaluated but not sold as **life settlements**, and variations in **LE** estimates provided by different **LE providers**.
- 3.3.3 **Mortality Improvement or Deterioration**—The actuary should consider whether incorporating historical and projected mortality improvement or deterioration is appropriate. These adjustments could be due to mortality improvement caused by medical advancements or new approved drugs, which could cause a shift in expected mortality for a group of **insureds** within the population.
- 3.3.4 **Application of Individual Underwriting to Mortality Assumptions**—If the actuary has access to **underwriting** information on individual **insureds** in the population, the actuary should consider adjusting the **mortality assumptions** to reflect this information. The actuary should consider using available data regarding factors such as the **impairment(s)**, **impairment** level, **debts or credits** assigned, **mortality multiples**, and life expectancies and their associated **survival curves**, as appropriate for the purpose of the assignment.
- If **LEs** are used, the actuary should make a reasonable effort to learn and understand the basis for the **LEs** including whether the **LE** information provided is a **mean** or **median LE**. If the actuary has unresolved concerns about the **LEs** used that have a material impact, the actuary should make the disclosure in section 4.1(f).
- 3.3.5 **Mortality Assumption Adjustments Using A/E Analysis**—The actuary should consider adjusting **mortality assumptions** when A/E results are available.
- 3.4 **A/E Analysis**—When performing an **A/E analysis**, the actuary should produce results by **duration**. As data and credibility allow, the actuary should analyze results by gender, smoking class, age bands, level of **mortality multiples**, **impairment** type, and other pertinent categories.
- 3.4.1 **Incurred Deaths**—The actuary should be aware of the methodology and sources used in determining **incurred deaths** and the completeness of such approach for determining deaths. The actuary should consider whether to adjust actual results to reflect **IBNR** deaths. The actuary should consider using a supplemental external source of recorded deaths, such as the Social Security Death Master File, if available, to improve the timeliness of reported deaths.

- 3.4.2 **Multiple Life Expectancies for a Single Life**—The actuary should assess whether the method for handling data regarding an **insured** underwritten multiple times (and creating multiple exposures) is appropriate for the intended use of the A/E study, given the reasons a specific **insured** was underwritten more than once. If the actuary uses a method prescribed by another party, the actuary should refer to ASOP No. 41, section 3.4.4, and the disclosures in section 4.3(a) and (b) of this ASOP.
- 3.4.3 **Use of a Modified A/E Mortality Basis**—The actuary may analyze results based on a **historical A/E mortality basis** or a **modified A/E mortality basis**. If a **modified A/E mortality basis** is used, the actuary should prepare results using a **historical A/E mortality basis** for comparative purposes, if the actuary believes doing so is appropriate. The actuary should refer to Section 4.2 (e).
- 3.5 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.
- 3.6 **Credibility of Data Used in Evaluation of Mortality**—When considering the credibility of the data used in setting assumptions, the actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance.
- 3.7 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

Section 4. Communications and Disclosures

- 4.1 **Disclosures**—When issuing actuarial communications relating to mortality in **life settlements**, the actuary should refer to ASOP Nos. 23, 25, and 41. In addition, the actuary should disclose the following items:
- a. a description of how the **mortality assumption** was developed including any modifications to the **mortality assumption** to reflect risk characteristics;
 - b. a description of the methods used to adjust results for the impact of multiple **life expectancy** evaluations on the same **insured** or on the same policy;
 - c. whether the actuary has information about the **LE provider's** mortality assumption and, if so, how the actuary's **mortality assumption** differs from that of the **LE provider**;
 - d. the extent of historical or projected mortality improvement or deterioration assumed for the assignment;

e. the method used for determining **incurred deaths**, including any **IBNR** assumption, and discussion of the significance and reason for choosing such **IBNR** assumption;

f. any unresolved concerns the actuary may have about the data, assumptions used, or methodology used that could have a material impact on the actuarial work product;

g. the **mortality assumption** for estimating the price that would be received to sell the asset in an orderly transaction between market participants, and the basis for that assumption, when performing work related to fair-value projections;

4.2 **Disclosures when Performing an A/E Analysis**—In addition to the disclosures in section 4.1, the actuary should disclose the following items if an **A/E analysis** is performed:

a. the source of the expected **mortality assumptions** and why the actuary believes they were appropriate for the assignment;

b. results of the **A/E analysis** by **duration**;

c. as data and credibility allow, a presentation of results by gender, smoking class, age bands, level of **mortality multiples**, **impairment** type, and other pertinent categories;

d. whether a **historical A/E mortality basis** or a **modified A/E mortality basis** was used for the **A/E analysis**. Such disclosure should indicate the implications of the method, the reasons for the choice of method, and whether the method could distort the results of the analysis;

e. if results on a **modified A/E mortality basis** are disclosed, the actuary should disclose results based on a **historical A/E mortality basis** for comparative purposes if the actuary believes doing so is appropriate. If results on a **modified A/E mortality basis** are disclosed and the actuary does not disclose **historical A/E mortality basis** results, the actuary should disclose why they are not being disclosed;

f. a description of the methods used to adjust results for the impact of multiple policies on the same **insured**;

g. when **IBNR** is included in the analysis, a presentation of results with and without **IBNR**; and

h. a statement that A/E results may not be indicative of future results.

4.3 **Other Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:

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- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law;
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Life Settlements are financial transactions in which a third party buys an existing life insurance policy for more than its cash surrender value but less than its net death benefit. The life settlements market grew out of the viatical settlements market, where chronically ill AIDS patients sold their policies, often to individual investors. The viatical settlements market essentially ended with the advent of antiretroviral drugs, which extended the lives of AIDS patients, lowering the economic value of their life insurance policies. From there, the market focus shifted to other health-impaired policyholders, primarily at older attained ages.

In the life settlements market, a mortality assumption is determined, which allows the buyer to project expected premiums, death benefits, and other relevant cash flows period by period. These expected cash flows are then discounted to determine the policy value. To determine the mortality assumption for an insured, it is common to use life expectancy (LE) estimates, often measured in months, produced by LE providers. The accuracy of the LE estimates is of great interest to the life settlements market since the value of a policy is highly dependent on the mortality assumption derived based on the LE estimate.

The life settlements market is highly dependent on actuarial expertise. In particular, analysis of actual mortality experience as compared to expectations (actual/expected or A/E analysis) has generated controversy in the life settlements market.

An A/E study is a backward-looking evaluation of underwriting results based on assumed mortality. The mortality assumption may be based on the mortality tables and modification factors used to produce the original LE estimate. At times, the mortality assumptions may be modified to reflect factors relevant to current LE estimates so that past results may be measured against current underwriting methodologies and tables.

Current Practices

Actuaries working in the life settlements market have been asked to assess mortality for many different purposes, including the following:

- an A/E study of an LE provider;
- the determination of survival curves for an LE provider;
- the pricing/modeling of life settlements policies and portfolios on behalf of investors;
- the valuation for financial reporting; and
- risk models to examine extension risk and its consequences for investor performance.

The discussion below focuses on A/E studies, which have been central to the life settlements market and an area of interest in life settlement discussions. However, as noted above, there are several other mortality-related tasks that actuaries may be asked to perform.

An actuary performing an A/E study on a block of lives or policies has several options for creating mortality assumptions for individual lives. The analyses differ regarding whether the original LE provider's mortality assumption is adjusted. A historical A/E mortality basis utilizes the LE provider's methodology in use at the time each LE was issued. Two modified A/E mortality bases used today are as follows:

1. Adjusted to Current Methodology A/E Mortality basis—A/E analysis that typically defines expected deaths using mortality tables, underwriting multipliers, improvement factors, and any other aspects of the underwriter's current methodology applied to the medical records and any other pertinent information for each insured that existed at the time the insured was underwritten. This attempts to measure how accurate the LE provider's current methodology is by back-testing it to obtain the A/E analysis that would have developed if the LE provider's current methodology had been in place from the time it began issuing LEs.
2. Back-solving the actual LE into a mortality table—A/E analysis that defines expected deaths by using the back-solving method with the actual LE that was issued and mortality assumptions that may or may not have actually been used when the LE was issued by the LE provider. This has commonly been used when the LE provider's table is proprietary, non-existent, deemed not relevant, or in the actuary's judgment is not appropriate for the life settlement population being studied.

In performing an A/E study, there are several methods that are used to handle multiple underwriting opinions on individual lives. The results of the A/E study can vary substantially depending on the method chosen. Some of the methods in use today are as follows:

1. Earliest submission—Counts only the earliest LE estimate produced for each insured. As a result, no single insured counts more than any other. This method does not reflect all instances of underwriting.

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2. Latest submission—Counts only the latest LE estimate produced for each insured. Considerations are the same as in method 1. This method excludes time periods where it is known that no deaths occurred.
3. One-year look-back—Includes only the latest LE estimate within each calendar year.
4. Fractional method—The earliest LE estimate contributes one exposure up until the time that the insured is underwritten a second time, at which point each contributes half an exposure. Repeat as necessary. Only one total exposure per year per insured is used, and a subject contributes only one death in the calculation.
5. Non-fractional method—Several LE estimates may be used for one insured. Possible reasons for inclusion depend on time elapsed since prior LE opinion used or material change in health status. One insured that has been underwritten many times may have a much larger impact on the A/E results than another insured who was underwritten once.

For A/E studies, there have been a wide range of adjustments made to account for IBNR. The level of IBNR chosen is crucial since the results of the A/E analysis could vary substantially. Given the age of the life settlements market, data availability, and the reliability of the methods used to determine deaths that have occurred, determining the appropriate IBNR level is difficult.

To the extent experience is available, a lag study is sometimes performed on the historical level of IBNR experienced. The results of the lag study, to the extent credible, are then used to determine the level of IBNR. Often a lag study is not feasible. In utilizing other resources to determine the level of IBNR, such as social security information, some practitioners account for differences between the population of life settlement participants and the population being considered. A further problem is that the methodologies for determining maturities may change over time, as has happened when access to the Social Security Death Master File became more restricted.

Appendix 2

Comments on Exposure Draft and Responses

The exposure draft of this ASOP, *Life Settlements Mortality*, was issued in May 2013 with a comment deadline of July 31, 2013. Ten comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Life Settlements Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term “reviewers” in appendix 2 includes the Life Settlements Task Force, the Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator asked whether the standard applies to valuation work involved in calculating the “theoretical” Fair Market Value of individual life policies. If so, may an actuary simply rely on a survival table produced by one independent LE provider or would more than one be required?
Response	The reviewers believe the standard does apply to certain aspects (see section 1.2, Scope) of valuation assignments involved in calculating the “theoretical” Fair Market Value of individual policies with respect to life settlements and feel that the guidance in the standard is appropriate.
Comment	<p>One commentator noted that the standard seems to have two very different goals:</p> <ol style="list-style-type: none">1. guidance on appropriate calculation of actual-to-expected results for mortality; and2. dealing with appropriate documentation for the selection and use of mortality assumptions with respect to Life Settlement reports per ASOP No. 41, <i>Actuarial Communications</i>. <p>The commentator stated that the actuarial profession should carefully consider whether it is truly in its best interest to attempt to meet this need via an ASOP.</p> <p>The commentator also suggested that this draft be bifurcated into two different standards. If this is not viable, then the drafters should be explicitly clear so that one purpose does not overwhelm the other and confuse readers.</p>
Response	The reviewers believe a single standard is appropriate.
Comment	One commentator suggested adding a paragraph in the background section of the transmittal memo that discusses the difficulties of using LE estimates from multiple LE providers. In addition, the commentator suggests the appendix should include these points. Otherwise, the document should be limited to A/E calculations.
Response	The reviewers do not believe this discussion is necessary in the transmittal memo or the appendix. The transmittal memo and appendix are not meant to provide guidance. Therefore, no change was made.

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Comment	One commentator suggested that the background section of the transmittal memo mention that actuaries are globally involved.
Response	The standard applies to actuarial practice only in the U.S.; therefore, no change was made.
Comment	One commentator believed it is not correct to state that actuaries are involved in all aspects of the market in the background section of the transmittal memo. It should be made clear that actuaries are not underwriters. The commentator suggested changing “all” to “various.”
Response	The reviewers agree and changed “all” to “various.”
Comment	One commentator suggested that the standard address in course of settlement claims.
Response	The reviewers believe that these claims would be either in reported claims or incurred but not reported claims and made no change.
Comment	One commentator suggested the standard address stochastic analysis in determining suitable confidence intervals for actual deaths when performing Actual-to-Expected studies.
Response	The reviewers believe that such practice would be permitted under the standard and made no change.
Comment	Two commentators suggested the standard address how monthly mortality rates are determined from annual mortality rates.
Response	The reviewers disagree with expanding the standard to address the subject and made no change.
Comment	One commentator stated that in some cases the actuary has only the (mean or median) Life Expectancy number, which was calculated by someone other than a qualified actuary, to use as a single data point in backing into an assumed table of mortality rates, and the actuary often isn’t told how that one data point was determined. Because of this, the commentator cannot support the actuarial profession accrediting and codifying the use of these practices as sound actuarial practice through publication in an Actuarial Standard of Practice.
Response	The reviewers believe the ASOP appropriately addresses this concern, and therefore made no change.
Comment	One commentator stated that actuaries should aggregate mortality experience data properly recorded and then contributed by the major companies in the industry, develop a credible experience table applicable to that business, and then create from that table suitable mortality tables to be used for pricing, valuation, and other financial risk management for their principals.
Response	The reviewers believe this is beyond the scope of the ASOP and made no change.
Comment	One commentator stated that there is not much life settlement data at many ages; therefore, it is up to the actuary to consider how to determine reasonable mortality for life settlements. The commentator stated that both a suitable underlying mortality table and system of mortality ratios for impairments is needed and must be considered reasonable by the actuary.
Response	The reviewers believe the guidance in the standard is appropriate and made no change.
Comment	One commentator stated that the same LE can be generated by more than one mortality table, including modifiers. Therefore, it is important that the actuary review LEs at many different ages and mortality levels or review the basic mortality curve and modifiers.
Response	The reviewers believe the guidance in the standard is appropriate and made no change.
Comment	One commentator stated that mortality multiples can be determined from a debit/credit underwriting methodology, but can also be based on actuarial and underwriting studies that develop the relationship between standard mortality and the mortality on a life with particular impairments.
Response	The reviewers believe the ASOP adequately provides for this and made no change.

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Comment	One commentator stated that the purpose and scope of this ASOP is aimed at actuaries doing mortality and A/E studies for life expectancy providers in the life settlements market. The commentator believes it should be pointed out that there are other uses of life expectancies and anticipated mortality, such as for financial planning.
Response	The reviewers agree LEs can be used for other reasons; however, the purpose of the ASOP was to address life settlements mortality. Therefore, no changes were made.
TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: Life expectancy providers may provide survival curves with their estimates. As drafted, this standard does not require disclosure when the actuary chooses a different survival curve assumption. Should it?	
Comment	Four commentators believed the actuary should disclose whether a survival curve assumed is different from that of the life expectancy provider.
Response	The reviewers agree and added a disclosure requirement in the new section 4.1(c).
Comment	One commentator believed this question makes the assumption that the normal practice is for the actuary to use the survival curve as provided by the LE provider. The commentator suggested a change in language to demonstrate this is not necessarily the case. The commentator believed it is most important for the actuary to disclose how the LE provider reports are used.
Response	The reviewers revised section 4.1(a) to require a description of how the mortality assumption was developed.
Comment	One commentator stated that the level of disclosure for setting mortality assumptions for a life settlement population should be the same as that required for other types of calculations.
Response	The reviewers believe the disclosure level in the standard is appropriate and made no change.
Question 2: Methodologies for Actual to Expected studies for life settlements may vary depending on the purpose of the study. The task force chose to define a “historical method” as being distinct from any number of “modified methods.” Is this distinction clear? Is it clear when a historical method is required?	
Comment	Three commentators believed the distinction was clear and adequate.
Comment	Some commentators question whether results based on a “historical method” should be required. They suggested the requirement either be removed or allow the actuary to decide on whether the disclosure of results based on a “historical method” is appropriate.
Response	The reviewers revised the wording in sections 3.4.3 and 4.2(e) to allow the actuary to decide whether it is appropriate to prepare and disclose historical results.
Comment	One commentator suggested that these terms be clarified for the benefit of other actuaries that do not have a lot of experience in this area.
Response	The reviewers agree and clarified the terms in response to the comment.
Question 3: Are the disclosures required in this standard sufficient and clear?	
Comment	One commentator believed the disclosures are sufficient and clear.
Comment	One commentator believed the disclosures are redundant and noted that the standard states “the actuary should refer to ASOP [No.] 41.” In addition, items 4.1(f), 4.1(g), and 4.1(h) refer to specific sections of ASOP No. 41.
Response	The reviewers believe some level of redundancy is useful and retained the draft wording, noting that section 4.1(f), 4.1(g), and 4.1(h) are employed in other standards. These items were moved to a new section 4.3.
Question 4: One insured may have had multiple life expectancy estimates. Are the disclosures for handling this situation appropriate?	
Comment	Two commentators believed the disclosures are appropriate.

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Comment	One commentator believed the standard requires disclosure of the handling of multiple life expectancy estimates only when the method is prescribed by another party.
Response	The disclosure was moved from section 4.2 to 4.1, which is not limited to the situation where the method is prescribed by another party.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator believes one of the intents of the standard is for the purpose of developing mortality assumptions (as in section 3.3). The commentator recommended new wording: “...to actuaries developing and evaluating mortality assumptions, and evaluating mortality experience, associated....”
Response	The reviewers adjusted the description to be more general. The reviewers decided to use some of the recommended new wording in section 1.2, Scope.
Section 1.2, Scope	
Comment	One commentator stated that the scope of the proposed ASOP appears so broad that it includes virtually all actuarial work with regard to life settlements but is entirely focused on A/E calculations. The commentator suggested that the scope of the ASOP should be more specific.
Response	The reviewers note section 1.2, Scope, is limited to certain types of work related to mortality and that the guidance is not limited to A/E calculations.
SECTION 2. DEFINITIONS	
Comment	One commentator found the phrase “historical method” (historical A/E analysis in the definitions) confusing and believes a “modified method” is not so much a modified method as an alternative expected basis.
Response	The reviewers agree and changed the terms to improve clarity.
Section 2.3, Debits and Credits	
Comment	One commentator found this very unclear. The commentator asked whether debits and credits should be described in terms of percentages added to, or subtracted from, 100% of “standard” morality for the age and gender. The commentator thought an example might help.
Response	The reviewers believe the definition is clear and made no change.
Section 2.4, Duration	
Comment	One commentator asked: “Is it always measured in years? Never in months?”
Response	The reviewers deleted “measured in years” from the definition.
Section 2.5, Expected Deaths	
Comment	One commentator suggested that the standard provide guidance on calculating expected deaths.
Response	The reviewers disagree with expanding the standard to address the subject and made no change.
Comment	One commentator found this very unclear. The commentator suggested working the term “mortality assumption” into the definition, so that it can be referenced when defining Historical A/E Analysis and Modified A/E Analysis.
Response	The definition was modified to make it clearer, and, given the new definition, the reviewers concluded that including the term “mortality assumption” was not necessary.

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Section 2.7, Historical A/E Analysis	
Comment	One commentator recommended the following definition: “A/E analysis based upon expected mortality rates consistent with those underlying the providers’ life expectancies and incorporating, as available, the mortality tables, underwriting multipliers, improvement factors, and other pertinent information used by the providers in determining the life expectancies.”
Response	The reviewers adjusted the definition of a “Historical A/E Analysis” (now referred to as “Historical A/E Mortality Basis”) to refer to “mortality assumptions” rather than “mortality tables.” The reviewers did not specify “providers” in the definition because there are situations where a historical A/E analysis is performed using original mortality assumptions that were not provided by an LE provider.
Comment	One commentator pointed out that the term “mortality tables” is used, but it is not defined.
Response	The reviewers changed “mortality tables” to “mortality assumptions.”
Comment	One commentator suggested the phrase be reworded as follows: “...and other pertinent information applicable to the individual life expectancies as of their associated underwriting dates.”
Response	The reviewers added the suggested wording with minor modifications.
Section 2.10, Incurred but not Reported (IBNR) Deaths	
Comment	One commentator suggested the following wording: “Deaths occurring during a period of exposure being analyzed but not reported during that period. Usually estimated based on past experience.”
Response	The reviewers believe the existing definition is appropriate and made no change.
Section 2.11, Incurred Claim	
Comment	One commentator suggested the following wording: “A death occurring during a period of exposure being analyzed, whether reported during that period or not.”
Response	The reviewers implemented the suggested wording.
Section 2.13, Life Expectancy (LE)	
Comment	Two commentators suggested grammatical changes to the definition.
Response	The reviewers revised the definition.
Section 2.14, Life Expectancy Provider (LE Provider)	
Comment	One commentator suggested deleting the phrase “specializing in the assessment of older or impaired lives.” The commentator noted that LE providers determine life expectancies on young lives as well as old, and on unimpaired as well as impaired, lives.
Response	The reviewers deleted the phrase “specializing in the assessment of older or impaired lives.”
Comment	One commentator suggested changing “underwriting services” to “underwriting analysis.”
Response	The reviewers agree and made the change.
Comment	One commentator suggested the second sentence about being the underwriter is not necessary.
Response	The reviewers agree and deleted the sentence.
Comment	One commentator suggested adding a sentence such as, “LE Provider is not limited to those entities who have sought and obtained official status as such by any of the states.”
Response	The reviewers do not believe the additional sentence suggested is necessary and made no change.

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Section 2.16, Mean Life Expectancy	
Comment	One commentator suggested changing the formula to an integral.
Response	The reviewers believe that the formula is unnecessary and deleted it.
Comment	One commentator believes the term “mean life expectancy” is redundant.
Response	The reviewers believe the term “mean life expectancy” is necessary because of the terminology used in the life settlements market.
Comment	One commentator suggested adding “The average life expectancy; also referred to as the actuarial or complete life expectancy.”
Response	The reviewers do not believe the additional terms are necessary and made no change.
Comment	One commentator stated that it seems unwise to specify a particular formula, especially when the formula is an approximation of the complete expectation formula and in a more exacting context would be written without an equal sign. Perhaps the formula given should be characterized as an example.
Response	The reviewers believe that the formula is unnecessary and deleted it.
Comment	One commentator was surprised to see “mean” and “median” life expectancies defined in terms of months, since most mortality estimates are annual.
Response	The reviewers have adjusted the definitions to be more generic. The unit of time is no longer specified.
Section 2.17, Median Life Expectancy	
Comment	One commentator suggested a change in the stated formula from a summation to an integral.
Response	The reviewers believe that the formula is unnecessary and deleted it.
Comment	One commentator believes “predicted median survival” or simply “median survival” would be a better term to use than “median life expectancy.” The commentator suggested changing the description to “...the smallest number m satisfying....”
Response	The term “median life expectancy” is used in the life settlements market. The reviewers decided no change to the term was necessary. The reviewers determined that a formula was unnecessary.
Section 2.18, Modification Factor	
Comment	One commentator suggested replacing “reflect rating classification” with “reflect impaired mortality.”
Response	The reviewers believe the term “rating classification” encompasses preferred, standard, and impaired cases and made no change.
Section 2.21, Mortality Multiple	
Comment	One commentator suggested the definition be changed to “A modification factor typically determined from a debit/credit underwriting methodology used to create a multiple intended to be applied to a standard mortality risk table.”
Response	The reviewers note mortality multiples in the life settlements market may be applied to preferred, standard, or impaired risk tables and made no change.
Section 2.22, Survival Curve	
Comment	One commentator stated that “Read literally, this means that there is one ‘curve,’ or set of probabilities, for each insured age x.”
Response	The reviewers disagree, as the definition refers to “an insured.”

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Comment	One commentator asked whether the definition was intended to mean that each “curve” is a set, or table, of survival probabilities for all values of t from 1 to $\omega-x$.
Response	The reviewers believe the wording is clear and made no change.
Section 2.23, Underwriting	
Comment	One commentator suggested adding “and/or estimating life expectancy” after “...reflecting risk classification....”
Response	The definition is meant to address the underwriting process rather than LE estimation. The reviewers made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, Required Knowledge	
Comment	One commentator stated that section 3.2 sets out the requirement that an actuary “should be knowledgeable” about a variety of topics, with no limitations on this requirement.
Response	Another commentator asked whether the subjects included are in the current syllabus for actuarial exams. The commentator suggested including recommended sources if the subject is covered. If not, the commentator asked whether sources should be included. The commentator asked, “If the ABCD is to determine whether a practicing actuary has the ‘required knowledge,’ on what will its opinion be based?” The reviewers note that the actuary needs to apply judgment in determining the degree of knowledge needed in a particular situation. The reviewers added the word “reasonably” and words “relevant aspects of.”
Section 3.3.1, Base Mortality Table Selection	
Comment	One commentator suggested that some context be provided for the use of the word “population.” The commentator was concerned that some readers would not understand “population” refers to “appropriate population.”
Response	The reviewers changed “population” to “underlying population.”
Section 3.3.2, Mortality Table Modifications	
Comment	One commentator suggested adding “For example, policy face amount may be utilized as a proxy for the socio-economic effect.”
Response	The reviewers do not believe such an example is needed and, therefore, made no change.
Section 3.3.4, Application of Individual Underwriting to Mortality Assumptions	
Comment	One commentator believes the current wording does not clearly distinguish the actuarial role from the underwriting role.
Response	The reviewers disagree and made no change.
Comment	One commentator stated that the mortality experience for life settlements is available only for a limited portion of the survival curve. Therefore, consideration must be given to the lack of long-term experience and the selection of ultimate mortality. Consideration should be given to the “wearing off” of underwriting rating by which preferred or substandard extra mortality may be graded toward zero as the insured survives well beyond the original LE or reaches the ultimate age in the mortality table.
Response	The reviewers believe that mortality multiples can encompass wearing off and other factors affecting ultimate mortality and made no change.

Section 3.3.5, Mortality Assumption Adjustments Using A/E Analysis	
Comment	One commentator suggested adding the following: “Adjustments should be considered to A/E assumptions reflecting the specific experience of the population (i.e. the life settlement portfolio), and then the experience of the specific LE Provider. Mortality tables designed for life insurance valuation (for example, 2008VBT) have implicit conservatism for life insurance that produce aggressive assumptions for life settlements and are not appropriate without adjustments.”
Response	The reviewers disagree with expanding the standard to address the subject and made no change.
Section 3.4, Actual-to-Expected Analysis	
Comment	One commentator believed this section ignores that one of the main contributors to wide variation in historical A/E results is the impact of the underlying mortality table. The commentator believes that any A/E results crossing time periods where the underlying mortality tables vary greatly cannot be reasonably combined.
Response	The reviewers note, in performing mortality studies, the actuary needs to make judgments about which data to use and how to adjust the data and made no change.
Section 3.4.1, Incurred Claims	
Comment	One commentator suggested replacing “Incurred Claims” with “Incurred Deaths” or “Incurred Maturities.”
Response	The reviewers changed the term to “Incurred Deaths.”
Comment	One commentator suggested the following: “The actuary should consider whether any IBNR assumption is reasonable based on supporting analysis or lack thereof. If there is no data to support an IBNR assumption, it should be sufficient for the actuary to disclose that they have assumed zero IBNR or provided for a short delay in reporting.”
Response	The reviewers changed “adjusting” to “whether to adjust.”
Section 3.4.2, Multiple Life Expectancies for a Single Life	
Comment	One commentator asked if the method used should be consistent with the method used in analyses of life-insurance mortality experience. The commentator suggested the standard state whether the method is or is not consistent and explain and justify the reason if it is different.
Response	There are several methods used in the analyses of life-insurance mortality experience. In addition, there are several issues that are unique to the life settlements market that might necessitate using a different method. For these reasons, the reviewers decided to not require the explanation of any differences and made no change.
Section 3.4.3, Use of a Modified A/E Analysis	
Comment	One commentator suggested adding the phrase, “the modifications made shall be explicitly and completely disclosed and,” after the introductory phrase, “If a modified A/E method is used.”
Response	The reviewers believe section 4 appropriately addresses the concerns of the commentator and made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Comment	One commentator suggested that section 4.2 be presented as section 4.1 and the section 4.1 be moved to section 4.2 and titled “Disclosures under other Actuarial Communications utilizing Life Settlement Mortality.”
Response	The reviewers believe disclosures for all situations should be listed first and disclosures for specific situations should be listed second. The disclosures related to ASOP No. 41 were moved to the new section 4.3.

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Comment	One commentator suggested section 4.1 and section 4.2 be renumbered 4.1.1, 4.1.2, etc.
Response	The reviewers disagree and note the numbering system follows standard ASOP formatting, and made no change.
Section 4.1, Disclosures	
Comment	One commentator suggested an item be added to section 4.1 for something like “the method used for interpreting and utilizing results from LE Providers.”
Response	The reviewers revised section 4.1(a) to require a description of how the mortality assumption was developed.
Comment	One commentator suggested that item 4.1(c) (incurred claims and IBNR) be removed since it will generally apply only to A/E calculations.
Response	The reviewers believe the disclosure is necessary for more than just A/E calculations and made no change.
Comment	One commentator believed item 4.1(e) should reflect purchases and sales.
Response	The wording was adjusted to reflect market participants.
Comment	On 4.1(e), one commentator stated “This is an area that deserves special caution. The actuary should clearly communicate that he/she cannot assign a ‘market value’ or determine a ‘market mortality assumption,’ because that will vary widely depending on the outlook of the individual buyer/seller. This additional unknown should be documented with the rationale for the actuary’s estimate.”
Response	The reviewers believe the disclosures discussed in sections 3.4.1 and 4.1.3(d) of ASOP No. 41 regarding risk and uncertainty address the issue raised and made no change.
Section 4.2, Disclosures when Performing an A/E Analysis	
Comment	One commentator suggested adding a requirement to disclose the total A/E results in addition to the durational requirement set forth in 4.2(b).
Response	The reviewers do not believe this should be a requirement and made no change.
Comment	On 4.2 (e), one commentator stated that the purpose of the historical A/E comparison is not clear from the ASOP. Such a comparison may not be useful for the actuary’s or client’s purposes. The ASOP should recommend, but not require, a historical A/E analysis for comparative purpose only if it meets the purpose of the analysis.
Response	The reviewers revised the wording to allow the actuary to disclose that historical A/E analysis results are not being presented and why.
APPENDIX: BACKGROUND AND CURRENT PRACTICE	
Comment	One commentator suggested removing the last sentence in the paragraph on “Adjusted to Current Methodology A/E analysis” (see Current Practices section of Appendix 1) where it is stated that an Adjusted analysis “attempts to address the question of how accurate the LE provider’s estimates are today.” The commentator believes this statement inappropriately implies that historical A/E analyses are not relevant in addressing how accurate the LE provider’s estimates are today.
Response	The reviewers agree and revised the last sentence to address the commentator’s concern.
Comment	One commentator suggested deleting the statement regarding “the main deficiency” of using the “Latest submission” (see Current Practices) method. The commentator believes this reflects an inappropriate bias.
Response	The reviewers agree and deleted the last two sentences.

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Comment	One commentator stated that the discussion in the background section is limited to buyers of policies and suggested that this be adjusted to reflect buyers “and sellers.”
Response	The reviewers believe the discussion provides a good overview of the market and made no change.
Comment	One commentator suggested that the background section reflect the fact that part of the problem with the life settlement market is that the participants in the market often do not utilize qualified actuaries at all or may utilize non-credentialed actuaries.
Response	The reviewers believe the suggested statement is not appropriate in this particular document and made no change.
Comment	One commentator was surprised that the standard does not comment on the industry practice of measuring LEs in months rather than years. The commentator feels that this industry practice gives the non-actuarial investor community a sense of spurious accuracy.
Response	The reviewers agree that the industry practice of measuring LEs in months should be mentioned and adjusted the wording in the background section.



ACTUARIAL **S**TANDARDS **B**OARD

**Actuarial Standard
of Practice
No. 49**

**Medicaid Managed Care Capitation
Rate Development and Certification**

**Developed by the
Medicaid Rate Setting and Certification Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
March 2015**

Doc. No. 179

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ASOP No. 49—March 2015

March 2015

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Medicaid Managed Care Capitation Rates and their Certification

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 49

This document contains the final version of ASOP No. 49, *Medicaid Managed Care Capitation Rate Development and Certification*.

Background

This ASOP was developed to establish guidance for actuaries preparing, reviewing, or giving advice on capitation rates for Medicaid programs, including those certified in accordance with 42 CFR 438.6(c). Since the federal regulations took effect, actuaries have used various methods to prepare the capitation rates. This ASOP incorporates the appropriate aspects of these methods to establish guidance and considerations in the rate development process.

Exposure Draft

In December 2013, the ASB approved the exposure draft with a comment deadline of May 15, 2014. Twenty-six comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2.

The significant changes made to the final standard in response to the comment letters are as follows:

1. Section 1.2 was edited to clarify situations when this ASOP applies.
2. Language was added to section 3.1 to require the actuary to have knowledge of and understand the requirements of 42 CFR 438.6(c).
3. Section 3.2.2 was modified to add a reference to ASOP No. 12, *Risk Classification*, and to clarify that capitation rates may vary by Medicaid eligibility groups.
4. In section 3.2.12(a)(1) was changed from “should” to “may.”

The ASB voted in March 2015 to adopt this standard.

ASOP No. 49—March 2015

Task Force on Medicaid Rate Setting and Certification

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 49

MEDICAID MANAGEDCARE CAPITATION RATE DEVELOPMENT AND CERTIFICATION

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services related to Medicaid (Title XIX) and Children’s Health Insurance Program (CHIP or Title XXI) managed care **capitation rates**, including a certification on behalf of a state to meet the requirements of 42 CFR 438.6(c).
- 1.2 **Scope**—This standard applies to actuaries performing professional services related to Medicaid managed care **capitation rates** including, but not limited to, the following:
 - a. certification on behalf of a state to meet the requirements of 42 CFR 438.6(c);
 - b. **capitation rate** bid or rate acceptance; and
 - c. department of insurance **capitation rate** filing.

This standard also applies to actuaries performing professional services related to managed care **capitation rates** for CHIP. Throughout this standard the term “Medicaid” also refers to CHIP.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for actuarial communications issued on or after August 1, 2015.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarially Sound/Actuarial Soundness**—Medicaid **capitation rates** are “**actuarially sound**” if, for business for which the certification is being prepared and for the period covered by the certification, projected **capitation rates** and other revenue sources provide for all reasonable, appropriate, and attainable costs. For purposes of this definition, other revenue sources include, but are not limited to, expected reinsurance and governmental stop-loss cash flows, governmental **risk adjustment** cash flows, and investment income. For purposes of this definition, costs include, but are not limited to, expected health benefits, health benefit settlement expenses, administrative expenses, the cost of capital, and government-mandated assessments, fees, and taxes.
- 2.2 **Base Data**—The historical data set used by the actuary to develop the **capitation rates**. The data may be from Medicaid fee-for-service data, **MCO** data, or from a comparable population data source.
- 2.3 **Capitation Rate**—A monthly fee paid for each member assigned or each event (for example, maternity delivery) regardless of the number or actual cost of services provided under a system of reimbursement for **MCOs**. **Capitation rates** can vary by member based on demographics, location, covered services, or other characteristics. **Capitation rates** can be structured so that an **MCOs** is fully at risk, or so that an **MCO** shares the risk with other parties.
- 2.4 **Disproportionate Share Hospital (DSH) Payments**—Additional amounts paid to hospitals that serve a disproportionately large number of Medicaid or uninsured patients. These payments may be subject to a hospital-specific limit. An annual allotment to each state limits federal financial participation in these payments. These payments are subject to requirements set forth in Section 1923(i) of the Social Security Act.
- 2.5 **Encounter Data**—Information about an interaction between a provider of health care services and a member that is documented through the submission of a claim to an **MCO**, and shared between the **MCO** and the state Medicaid agency.
- 2.6 **Enhanced or Additional Benefits**—Benefits offered by **MCOs** to their Medicaid members that are above and beyond the benefits offered by the state Medicaid plan. Common examples are adult dental services, non-emergency transportation, and adult vision services.
- 2.7 **Federally Qualified Health Center (FQHC)**—An organization that (1) receives grants under Section 330 of the Public Health Service Act; (2) does not receive a grant under the Section 330 of the Public Health Service Act, but otherwise meets all requirements to receive such a grant; or (3) is an outpatient health clinic associated with tribal or Urban Indian Health Organizations (UIHO). The organization must have also applied for recognition, and been approved as a federally qualified health center for Medicare and Medicaid, as described in Sections 1861(aa)(3) and 1905(l)(2) of the Social Security Act. Payments to these organizations are subject to requirements set forth in Section 1902(bb) of the Social Security Act.

- 2.8 **Intergovernmental Transfer (IGT)**—A transfer of public funds between governmental entities (for example, county government to state government or state university hospital to state Medicaid agency).
- 2.9 **Managed Care Organization (MCO)**—The entity contracting with the state Medicaid agency to provide health care services for selected subsets of the Medicaid population.
- 2.10 **Medical Education Payments**—Payments for graduate medical education as part of the rate structure for inpatient hospital payments or as supplemental payments under 42 CFR 447.272. These payments may include direct graduate medical education (GME) or indirect medical education (IME) costs. These payments may be included as part of Medicaid managed care **capitation rates** or may be made directly to providers for managed care enrollees.
- 2.11 **Minimum Medical Loss Ratio**—A provision that requires the **MCO** to use no less than a stated portion of its earned premium for defined medical or care management expenditures.
- 2.12 **Performance Incentive**—A payment mechanism under which an **MCO** may receive funds in addition to the **capitation rates** for meeting targets specified in the contract between the state and the **MCO**.
- 2.13 **Performance Withhold**—An amount included in the **capitation rates** that is paid if the **MCO** meets certain state requirements that may be related to quality or operational metrics. The amount may be withheld or paid up front with the monthly **capitation rate**.
- 2.14 **Rating Period**—The time period for which managed care Medicaid **capitation rates** are being developed.
- 2.15 **Risk Adjustment**—The process by which relative risk factors are assigned to individuals or groups based on expected resource use and by which those factors are taken into consideration and applied.
- 2.16 **Rural Health Clinic (RHC)**—A clinic that meets certain requirements for providing primary care services in specific areas, as outlined in the Public Health Service Act and defined in Section 1905(l)(1) of the Social Security Act. Medicaid payment rates to RHCs may be specified in applicable law.
- 2.17 **State Plan Services**—The benefits provided to Medicaid beneficiaries who are eligible under a qualifying category of Medicaid assistance in a state.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—An actuary may be developing, certifying, or reviewing Medicaid Managed Care **capitation rates** on behalf of a state Medicaid agency or an **MCO**. When certifying

whether **capitation rates** meet the requirements of 42 CFR 438.6(c) or reviewing such a certification, the actuary must have knowledge and understanding of those requirements.

Title 42 CFR 438.6(c) requires that **capitation rates** paid by the state to the **MCOs** be certified as **actuarially sound**. The soundness opinion applies to all contracted **capitation rates**. However, the actuary is not certifying that the underlying assumptions supporting the certification are appropriate for an individual **MCO**.

An actuary providing actuarial services for a contracting **MCO** may be required to develop and submit **capitation rates** to the state Medicaid agency for a **rating period**. While the federal regulation 42 CFR 438.6(c) does not extend to an **MCO** actuary, the **MCO** actuary may be required under the terms of a proposal or contract to submit an actuarial opinion for the **capitation rates** that may or may not indicate compliance with 42 CFR 438.6(c).

3.2 Medicaid Managed Care Capitation Rate Development Process and Considerations—The actuary should address the following when developing **capitation rates**.

3.2.1 Form of the Capitation Rates (Single Rate or Capitation Rate Ranges)—The **capitation rate** certification may apply to a single point estimate **capitation rate** or a range of **capitation rates**. If a range of **capitation rates** is prepared, the contracted rates with an **MCO** may be at either end of the range or a point within the range. The **capitation rates** may vary by **MCO**.

3.2.2 Structure of the Medicaid Managed Care Capitation Rates—**Capitation rates** are usually separately developed and paid in individual **capitation rate** cells based on characteristics that cause costs to differ materially. Examples of these characteristics include age, gender, qualifying event (for example, maternity delivery), geographic region, Medicaid eligibility group, eligibility for Medicare benefits, diagnosis or **risk adjustment** factors, and **MCO** differences. In determining the rating structure, the actuary should consider how well the structure aligns capitation revenue and **MCO** risk as well as the complexity of the rating structure. A certification of the **capitation rates** under 42 CFR 438.6(c) applies to each of the individual **capitation rate** cells. For further guidance, see ASOP No. 12, *Risk Classification*.

3.2.3 Rebasing and Updating of Rates—When developing **capitation rates** for subsequent **rating periods**, the actuary should either rebase the rates or update existing rates. Rebasing of rates generally refers to using **base data** from a more recent time period to develop **capitation rates** along with updating assumptions used to develop the rates. Updating of rates involves adjusting existing rates to reflect the impacts of any program, benefit, population, trend, or other changes between the **rating period** of the existing rates and the **rating period** of the updated rates.

The actuary should consider the following in making the determination whether to rebase rates or update existing rates: availability of updated data, likely materiality of rebasing, changes in the underlying population, quality of data since the last rebasing, and time elapsed since the last rebasing.

- 3.2.4 **Base Data**—The actuary should use **base data** (for example, population, benefits, provider market dynamics, geography) that is appropriate for the program for which **capitation rates** are being developed. The **base data** may span more than one year.

The actuary should use **base data** sources for utilization or unit cost that are relevant to the given Medicaid population and appropriate for the given use. Program-specific historical experience from the following sources are examples of **MCO** data that may meet these criteria:

- a. financial reports;
- b. summary **encounter data** reports;
- c. **encounter data** with payment information;
- d. **encounter data** without payment information;
- e. sub-capitation payment information; and
- f. provider settlement payment reports.

If the managed care program is new or if previously carved-out services are to be included in the rates, the actuary may need to use alternative data sources. Such alternative data sources typically include fee-for-service experience and experience from other states, although other sources may be appropriate. That experience may be available in several forms, including the following:

1. financial reports;
2. summary claims data reports;
3. raw claims data with payment information; and
4. state-specific provider settlement payment reports.

If the covered population is new, the actuary should identify data sources for similar populations and make appropriate adjustments.

- 3.2.5 **Covered Services**—When developing capitation rates under 42 CFR 438.6(c), the actuary should reflect covered services for Medicaid beneficiaries, as defined in

the contract between the state and the MCOs, which may include cost effective services provided in lieu of **state plan services**.

When developing capitation rates for other purposes, the actuary should reflect the cost of all services, including **enhanced or additional benefits**, provided to Medicaid beneficiaries.

- 3.2.6 **Special Payments**—Payments in addition to the Medicaid fees may be made by states directly or through the MCOs to providers of Medicaid services. These payments are usually made to hospitals, but other provider types may also qualify for such payments. These payments are sometimes reciprocation for the provider paying a special tax or assessment fee.

The actuary should identify any special payments to providers (for example, supplemental payments or bonuses) and include these payments in development of the **capitation rates** in a manner that reflects the payment policy for these special payments in the **rating period**.

- 3.2.7 **Base Data Period Adjustments**—The actuary should consider **base data** period adjustments of the following three types:

- a. **Retroactive Period Adjustments**—The retroactive period adjustments reflect changes that occurred during the **base data** period to standardize the data over the **base data** period.
- b. **Interim Period Adjustments**—The interim period adjustments reflect changes that occurred between the **base data** period and the **rating period**.
- c. **Prospective Period Adjustments**—The prospective period adjustments reflect changes that will occur in the **rating period**.

- 3.2.8 **Other Base Data Adjustments**—The actuary should consider other **base data** adjustments, which may include the following:

- a. **Missing Data Adjustment**—Circumstances that may cause data to be missing include, but are not limited to, the following:
 1. certain claims are not processed through the same system as the **base data**;
 2. Medicaid fee-for-service data may not include all services or expenses to be covered by the **capitation rate**; or
 3. Medicaid **encounter data** may not reflect services that are sub-capitated and not reported through the **encounter data** system.

- b. Incomplete Data Adjustment—The incomplete data adjustment reflects claims that were in course of settlement, claims that were incurred but not reported, or amounts that are due for reinsurance or claim settlements.
 - c. Population Adjustment—The population adjustment modifies the **base data** to reflect differences between the population underlying the base period and the population expected to be covered during the **rating period**.
 - d. Funding or Service Carve-Out Adjustments—The funding or service carve-outs are not the financial responsibility of the **MCO**. Funding carve-outs may include graduate **medical education payments**, **disproportionate share hospital payments**, or provider taxes. Service carve-outs reflect services that will not be covered by the **capitation rate**.
 - e. Retroactive Eligibility Adjustments—Medicaid beneficiaries are often provided retroactive eligibility coverage for a period prior to submitting an application for Medicaid coverage. The retroactive eligibility adjustment reflects the exclusion of periods of retroactive eligibility, if any, that are not the responsibility of the **MCO**.
 - f. Program, Benefit, or Policy Adjustments—The program, benefit, or policy adjustments reflect differences in benefit or service delivery requirements between the base period and the **rating period** that impact the financial risk assumed by the **MCO**.
 - g. Data Smoothing Adjustments—The data smoothing adjustments address anomalies or distortions in the **base data**, such as large claims or limited enrolment.
- 3.2.9 Claim Cost Trends—The actuary should include appropriate adjustments for trend and may consider a number of elements in establishing trends in utilization, unit costs, or in total. Medicaid utilization trend rates may be particularly affected by changes in demographics and benefit levels, and by policy or program changes. Medicaid unit cost trends may be particularly affected by changes in state-mandated reimbursement schedules (if applicable), Medicaid fee-for-service fee schedules, and provider contracting performed by the **MCOs**. The trend assumption should not include adjustments captured elsewhere in the capitation rate development.
- 3.2.10 Managed Care Adjustments—The actuary may apply managed care adjustments based on the assumption that the program will move from the level of managed care underlying the **base data** to a different level of managed care during the **rating period**. The adjustments may be to utilization, unit cost, or both, and the impact of the adjustments may be either an increase or a decrease to the **base data**. If managed care adjustments are included, the changes reflected in the

adjustments should be attainable in the **rating period**, in the actuary's professional judgment.

The actuary should consider the following when reviewing the need for and developing the managed care adjustments:

- a. state contractual and operational requirements, and relevant laws and regulations;
- b. current characteristics of the provider markets; and
- c. the maturity level of the managed Medicaid program.

3.2.11 **Non-Claim Based Medical Expenditures**—The actuary should consider Medicaid-specific payments that are not included in the **base data** or that are included in the **base data** but for which the historical costs do not represent future costs. The actuary should determine whether these amounts will be an expense to the **MCOs**, and if so, how the amounts should be reflected. These types of payments include, but are not limited to, the following:

- a. **disproportionate share hospital payments;**
- b. **federally qualified health centers or rural health clinics supplemental settlement payments;**
- c. **medical education payments;**
- d. **intergovernmental transfers;** and
- e. pharmacy rebates anticipated to be collected by the **MCO**.

3.2.12 **Non-Medical Expenses**—The actuary should include amounts for appropriate non-medical expenses in the development of the **capitation rates**. The non-medical expenses may vary by **MCO**.

- a. **Administration**—The actuary should include a provision for administrative expenses appropriate for the Medicaid managed care business in the state.
 1. **Determination of Administrative Expenses**—In determining administrative expenses, the actuary may take into account relevant characteristics and functions of the **MCOs** and the Medicaid program, such as the following:
 - i. overall size of the **MCO** across all lines of business;

- ii. age and length of time participating in Medicaid;
 - iii. organizational structure; and
 - iv. demographic mix of enrollees.
2. **Types of Administrative Expenses**—Appropriate types of administrative expenses include, but are not limited to, the following:
- i. marketing;
 - ii. claims-processing;
 - iii. medical management costs including those required to achieve savings from fee-for-service or prior periods assumed in the medical cost targets; and
 - iv. general corporate overhead.
- b. **Underwriting Gain**—The actuary should include a provision for underwriting gain, which is typically expressed as a percentage of the premium rate, to provide for the cost of capital and a margin for risk or contingency. The underwriting gain provision provides compensation for the risks assumed by the **MCO**. These risks may include insurance, investment, inflation, and regulatory risks, as well as risks associated with social, economic, and legal environments. The actuary should consider the effect of any risk sharing arrangements discussed in section 3.2.14, and **performance withholds** and incentives discussed in section 3.2.15.

The methods used to develop the underwriting gain provision of the **capitation rate** should be appropriate to the level of capital required and the type and level of risk borne by the **MCO**. The actuary may reflect investment income in establishing the underwriting gain component of the **capitation rate**, although an explicit adjustment is not required. Elements of investment income that the actuary may reflect include investment income from insurance operations and investment income on capital and underlying cash flow patterns.

An actuary working on behalf of an **MCO** may determine that a negative underwriting gain is appropriate for that plan's circumstances. In this case, the negative underwriting gain should be disclosed in the actuarial communication.

- c. **Income Taxes**—The actuary should consider the effect of expected income taxes on the underwriting gains and investment income retained by the **MCO**.
 - d. **Taxes, Assessments, and Fees**—The actuary should include an adjustment for any taxes, assessments, or fees that the **MCOs** are required to payout of the **capitation rates**. If the tax, assessment, or fee is not deductible as an expense for corporate tax purposes, the actuary should apply an adjustment to reflect the costs of the tax. Taxes, assessments, and fees may differ among the **MCOs** in the program. The actuary preparing a certification under 42 CFR 438.6(c) should consider the need to adjust **capitation rates** for each **MCO** to reflect each **MCO's** expected expenses for these items.
- 3.2.13 **Risk Adjustment**—An actuary working on behalf of the state should determine whether to adjust capitation payments to different **MCOs** by using a **risk adjustment** methodology. Considerations in making this determination include program enrollment procedures that may affect differences in risk across **MCOs** or among the populations used to develop the rates and to which the rates will be applied, data availability and quality, timing, and other practical considerations including cost. ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*, provides further guidance. Risk-adjusted rates that may be developed from **actuarially sound** base rates and application of an appropriate risk adjustment method are considered **actuarially sound**, even if the resulting rates fall outside of the unadjusted rate ranges or vary from the single point rates.
- The actuary, whether working on behalf of the state or an **MCO**, should understand and consider the potential impact of the **risk adjustment** methodology being used, if any, on the **capitation rate**.
- 3.2.14 **Reinsurance, Risk Corridors, and Other Risk Sharing Arrangements**—The actuary should consider the effect of any risk sharing arrangements between the **MCO** and the state Medicaid agency or the federal government.
- The actuary should consider how payments related to risk sharing arrangements have been reported in the base period data, how these payments are to be estimated in the future, and how these payments will be reflected in the **capitation rates**.
- 3.2.15 **Performance Withholds and Incentives**—The actuary should consider how the existence of the withhold and incentives will affect the plan costs, including claims and administration costs. The **capitation rates** should reflect the value of the portion of the withhold for targets that the **MCOs** can reasonably achieve. The **capitation rates** should not reflect the value of incentives. The actuary should also consider any limitations to the amount of incentive payments or withhold specified in legislative regulations or guidance.

- 3.2.16 **Minimum Medical Loss Ratios**—The actuary should consider governmental and contractual **minimum medical loss ratio** requirements as well as the sharing of gains or losses. Such provisions may affect the underwriting gain provision component of the **capitation rates**.
- 3.2.17 **State Initiatives**—In setting capitation rates, the actuary should only include the impact of state initiatives that are supported by corresponding cost saving policies including, but not limited to, program changes or reimbursement changes.
- 3.2.18 **Inaccurate or Incomplete Information Identified after Opinion or Rate Certification**—If the actuary determines after the opinion or certification was issued that he or she used inaccurate or incomplete information, the actuary should notify the principal if, in the actuary’s professional judgment, the new information is material to the **actuarial soundness** of the rates and is not inherent in the assumptions already included in the rates.
- 3.3 **Qualified Opinion on Actuarial Soundness**—The actuary should provide a qualified opinion if, in the actuary’s judgment, the rates are not **actuarially sound**. Further, the opinion should be qualified if a negative underwriting gain is determined to be appropriate for a specific plan’s circumstance by an actuary working on behalf of an **MCO**.
- 3.4 **Documentation**—The actuary should document the methods, assumptions, procedures, and sources of the data used. The documentation should be in a form such that another actuary qualified in the same field could assess the reasonableness of the work. The actuary should consider documentation to address the Centers for Medicare & Medicaid Services’ regulations specific to Medicaid managed care **capitation rate** development and certification. For further guidance, see ASOP No. 23, *Data Quality*; ASOP No. 25, *Credibility Procedures*; and ASOP No. 41, *Actuarial Communications*.

Section 4. Communications and Disclosures

- 4.1 **Communications**—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41.
- 4.2 **Disclosures**—The actuary should include the following, as applicable, in an actuarial communication:
- a. as required by 42 CFR 438.6(c), a statement that **capitation rates** provided with a rate certification are considered “**actuarially sound**,” according to the following criteria:
 1. the **capitation rates** “have been developed in accordance with generally accepted actuarial principles and practices”;

2. the **capitation rates** “are appropriate for the populations to be covered, and the services to be furnished under the contract”; and
 3. the **capitation rates** “have been certified, as meeting the requirements of this paragraph [42 CFR 438.6(c)], by actuaries who meet the *Qualification Standards* established by the American Academy of Actuaries and follow the practice standards established by the Actuarial Standards Board.”
- b. the definition of “**actuarial soundness**”;
 - c. disclosure of any items causing the opinion to be qualified such as the use of a negative underwriting gain by an actuary working on behalf of a Medicaid **MCO**;
 - d. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - e. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - f. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix1

Background and Current Practices

Note: This appendix is provided for informational purposes only and is not part of the standard of practice.

Background

Medicaid is a program that pays for health care services for certain low-income persons in the United States and its Territories, as authorized by Title XIX of the Social Security Act. The federal and state governments cooperatively administer Medicaid. The Centers for Medicare & Medicaid Services (CMS) is the agency charged with administering Medicaid on behalf of the federal government. The federal government establishes certain requirements for Medicaid, and the states administer their own programs. The federal government and the states share the responsibility for funding Medicaid.

Medicaid programs were originally fee-for-service (FFS) programs in which the state paid the providers directly. In the 1980s, some states began to contract with managed care organizations (MCOs) to provide health care services for selected subsets of the Medicaid population. In some cases, states may need to obtain a CMS waiver in order to waive certain Medicaid regulations and contract with MCOs. In many states, the state or its contractor develops capitation rates that are offered to the MCOs, rather than the MCOs proposing rates to the state. Under this arrangement, typically the MCOs may accept the rates or decline to participate in the program, though some negotiation may be possible.

Beginning in August 2003, the capitation rates paid by the state to the MCOs must be certified as actuarially sound under 42 CFR 438.6(c). The actuary performing the rate certification process may be an employee of the state Medicaid agency or contracted as a consulting actuary. Normally, the certifying actuary will not have as specific knowledge of each MCO's operations and experience as an actuary working on behalf of the MCO. The soundness certification applies to all contracted capitation rates. However, the actuary is not certifying that the capitation rates are appropriate for an individual MCO.

Since the federal regulations took effect, actuaries have used various methods to prepare the capitation rates. This ASOP has been developed to incorporate the appropriate aspects of these methods to establish guidance and considerations in the rate development process.

Current Practices

The current Medicaid capitation rate setting and certification methodology varies state by state, but actuaries across the country use many of the considerations outlined in the ASOP. Actuaries rely on the August 2005 practice note and traditional health care actuarial principles in the development of the actuarially sound capitation rates.

In many states, the capitation rates are developed independently by the state Medicaid agency and the certifying actuary. The capitation rates are often offered to the contracting MCO without negotiation, but the contracting MCOs and their actuaries may have the ability to review the capitation rate development and provide comment. Further, a state Medicaid agency may negotiate rates with each MCO based on a rate range or allow a competitive bid. Due to the unique nature of these contracting arrangements, the certifying actuary has a greater responsibility in the determination of the capitation rates (either the point estimates or capitation rate ranges), since the certifying actuary is not directly affiliated with the contracted MCO.

Actuaries rely on data and information provided by the state Medicaid agency, the contracted MCOs, and other publicly available information. Actuaries may publish a data book that outlines the baseline data, adjustments to the baseline data, actuarial assumptions, and the development of capitation rates. Public meetings may be held where the capitation rate development process is presented to the contracted MCOs. Following the public meetings, the MCOs may provide questions to the state Medicaid agency and the certifying actuary regarding the capitation rate development process and assumptions. The certifying actuary reviews the comments and adjusts the capitation rates, if appropriate.

The state Medicaid agency presents the actuarial rate certification and related documentation to CMS for review and approval. CMS may submit questions to the state Medicaid agency and the certifying actuary regarding the capitation rate development and the related contract with the MCOs. The certifying actuary will often provide written responses to CMS.

Additional Resources

The following resources may assist in furthering actuaries' understanding of the capitation rate development process.

- American Academy of Actuaries, Health Council Practice Note, *Actuarial Certification of Rates for Medicaid Managed Care Programs*, August 2005,
<http://actuary.org/content/actuarial-certification-rates-medicaid-managed-care-programs>
- Centers for Medicare and Medicaid Services, Medicaid website, <http://medicaid.gov/>

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- Medicaid and CHIP Payment and Access Commission (MACPAC),
<http://www.macpac.gov/>
- CMS Medicaid Managed Care Rate Setting Guidance, 2015
<http://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/managed-care/downloads/2015-medicaid-manged-care-rate-guidance.pdf>
- Federal Register / Vol. 67, No. 115 / Friday, June 14, 2002 / Rules and Regulations, page 41097, Sec. 438.6 Contract Requirements (c) Payments under risk contracts,<http://www.cms.gov/Regulations-and-Guidance/Regulations-and-Policies/QuarterlyProviderUpdates/downloads/cms2104f.pdf>

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of proposed ASOP, *Medicaid Managed Care Capitation Rate Development and Certification*, was issued in December 2013 with a comment deadline of May 15, 2014. Twenty-six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Medicaid Task Force and the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Task Force, Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: This ASOP has been prepared to apply both to actuaries developing actuarial statements of opinion for a Medicaid MCO and to actuaries developing rate certifications under 42 CFR 438.6(c). Is this appropriate? Or, should the ASOP be limited to actuaries developing rate certifications under 42 CFR 438.6(c)?	
Comment	Several commentators indicated support for both limiting the ASOP to 42 CFR 438.6(c) rate certifications and for applying it to all Medicaid rate setting actuarial opinions; however, the majority of the responses supported having the ASOP apply to all Medicaid rate development statements of actuarial opinion.
Response	The reviewers believe that the ASOP provides appropriate guidance and covers appropriate situations involving Medicaid capitation rate development, Medicaid certifications, and Medicaid statements of actuarial opinion.
Question 2: As written, this ASOP applies to Children’s Health Insurance Program (CHIP) managed care capitation rate development. Is this appropriate?	
Comment	Several commentators supported having the ASOP apply to CHIP capitation rate development and certification. Additionally, comments were received indicating that the ASOP should also apply to the Medicaid expansion programs.
Response	The reviewers retained language indicating applicability of the ASOP to CHIP capitation rate development and certification. The reviewers reviewed the ASOP language to make sure it applies to the appropriate healthcare programs funded under Title XIX (Medicaid) and Title XXI (CHIP).

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Question 3: Is the definition of “actuarially sound/actuarial soundness” in section 2.1 clear?	
Comment	The comments received suggested that the following terms in the “actuarially sound/actuarial sound” definition be separately defined: “revenue in aggregate”; marginally or fully-loaded administrative expenses; reinsurance cash flows; underwriting gain; investment income; and taxes.
Response	The reviewers made no change to the definition of “actuarial soundness.” The reviewers modified the definition of “underwriting gain” in section 3.2.11(b). The reviewers determined the other suggested definitions were not needed but in some cases the guidance in the standard was clarified.
Comment	Commentators suggested that the terms “generally accepted actuarial practices” and “certified by an actuary who meets the qualification standard” should be included in the definition of “actuarial soundness.”
Response	The reviewers believe that the definition of “actuarial soundness” is appropriate for this standard and does not need to include these additional terms.
Comment	Several commentators suggested that the word “attainable” is insufficiently described.
Response	The reviewers determined that further description of the word “attainable” would be overly prescriptive and made no change.
Question 4: Is section 3.2.16, Inaccurate or Incomplete Information Identified after Opinion or Rate Certification, which discusses the actions required of the certifying actuary if the underlying data is identified to be inaccurate or incomplete, clear and appropriate?	
Comment	Commentators suggested that additional information should be provided regarding who the actuary should notify if the actuary determines that the capitation rates should be changed due to inaccurate or incomplete data, to include CMS or MCOs.
Response	The reviewers disagree and believe that the requirement to provide notice to the principal is sufficient and, therefore, made no change.
Comment	Commentators suggested providing clear guidelines on a process for reporting inaccuracies and including the new or corrected information in the rate development, and increasing transparency when this situation arises and the rates are corrected.
Response	The reviewers disagree that the ASOP should specify such a process and, therefore, made no change.
Comment	Commentators suggested providing MCOs with a process for sending information to the actuary about errors in the data.
Response	ASOPs provide guidance for actuaries, not organizations. The reviewers disagree that the ASOP should specify such a process and, therefore, made no change.
Comment	Two commentators were concerned that the term “incomplete” would be misinterpreted to mean that the actuary would need to change the rates due to prospective assumptions not equaling actual assumptions.
Response	The reviewers believe that the ASOP appropriately differentiates between incomplete data and prospective assumptions and, therefore, made no change.
Comment	Two commentators did not understand the timing around making a correction given the words “If prior to issuance...” in the section.
Response	The reviewers revised this section to address this comment.

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Question 5: Does the ASOP restrict practice inappropriately?	
Comment	Most commentators stated that the ASOP does not restrict practice inappropriately. Two commentators thought it restricted practice if it applies to actuaries that develop rates outside of 42 CFR 438.6(c). One commentator felt that the guidelines around development of the administrative components of the rates were too prescriptive.
Response	The reviewers made some revisions to the guidance to address the comments expressing concern regarding inappropriate restriction of practice.
Question 6: Does this ASOP provide sufficient guidance for actuaries practicing in these areas?	
Comment	Several commentators indicated that the ASOP provided sufficient guidance and some that indicated the ASOP did not provide sufficient guidance. Where commentators indicated the ASOP did not provide sufficient guidance, some provided general recommendations while others provided more specific recommendations.
Response	While some commentators indicated that the ASOP did not provide sufficient guidance, in most cases they provided specific comments on where they believed additional guidance was necessary. The reviewers have addressed those comments in the relevant sections.
Question 7: Does this ASOP provide sufficient guidance to actuaries in identifying and addressing potential inconsistencies in the expectations of actuaries working for Medicaid MCOs and those actuaries working for State Medicaid Agencies?	
Comment	Commentators were divided in their response to this question. Several commentators believed that the ASOP did provide sufficient guidance on this topic. Several other commentators believed that the ASOP should provide additional guidance, either generally or in specific sections. Several other commentators believed that the ASOP did not provide sufficient guidance, but that the ASOP should be limited to actuaries working for state Medicaid agencies and thus did not need to provide additional guidance.
Response	The reviewers determined that the ASOP should apply to both actuaries working for Medicaid MCOs and actuaries working for state Medicaid agencies. The reviewers made clarifications and modifications in relevant sections in response to the comments received.
Comment	Several commentators felt that the ASOP could go further in addressing these differences. One commentator asked if there could be an illustration of circumstances when the MCO actuary is not certifying compliance with 42 CFR 438.6(c) and is not bound by the ASOP; and sought clarification of whether or not the MCO actuary needed to comply with the ASOP when completing a certification. Another commentator suggested further guidance on issues for actuaries working for state Medicaid agencies.
Response	The reviewers note the MCO actuary would be required to comply with the ASOP regardless of whether or not the actuary is completing a certification related to the 42 CFR 438.6(c). The reviewers modified the scope section by adding examples of situations to which the ASOP applies.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	Several commentators questioned the applicability of the ASOP to various populations including: the Aged, Blind and Disabled - SSI population, ACA Medicaid expansion populations, and Medicare-Medicaid dual integration populations.
Response	The reviewers reviewed the ASOP language to make sure it applies to the appropriate healthcare programs funded under Title XIX (Medicaid) and Title XXI (CHIP) and made no change.

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SECTION 2. DEFINITIONS	
Section 2.3, Capitation Rate	
Comment	One commentator mentioned the particular situation in Minnesota where risk is shared with providers. The suggestion was made to add a phrase to the end of the definition “or with providers.”
Response	The reviewers agree and modified the definition.
Section 2.8, Intergovernmental Transfers (IGTs)	
Comment	One commentator recommended that the ASOP define medical and non-medical IGTs and to consider whether or not the actuary should be required to report certain IGTs separately if they increase the federal government or state share of Medicaid costs.
Response	The reviewers believe this type of reporting is beyond the scope of the standard and made no change.
Section 2.10, Medical Education Payments	
Comment	One commentator suggested noting that medical education payments may be made directly from the state to the providers.
Response	The reviewers believe that the definition addresses this situation and made no change.
Comment	One commentator suggested expanding this section to discuss all supplemental payments and not just medical education payments.
Response	The reviewers note that section 3.2.6, Special Payments, was modified to include supplemental payments as one example of special payments. The reviewers believe the revised section appropriately covers special payments, including supplemental payments.
Section 2.15, Risk Adjustment	
Comment	One commentator wanted the definition of “risk adjustment” expanded to include capitation rate structural elements used such as maternity delivery case rate payments.
Response	The reviewers believe this is addressed in section 3.2.2, Structure of the Medicaid Managed Care Capitation Rates, as amended, and made no change to section 2.15.
Section 2.17, State Plan Services	
Comment	Several commentators requested clarification on definitions related to “state plan services,” “covered services,” and “in-lieu-of services.”
Response	The reviewers modified section 3.2.5, Covered Services, to provide additional clarity.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Overview	
Comment	Several commentators recommended that language be added stating that the rates [under 42 CFR 438.6 (c)] should be appropriate for each individual MCO, with one commentator stating that such appropriateness should be achieved using risk adjustment.
Response	The reviewers note that certification of capitation rates under 42 CFR 438.6 (c) for individual MCOs is allowed under this standard but do not believe it should be required by the standard. Therefore, no change was made.
Comment	One commentator recommended that the ASOP clarify that the actuary may, in some circumstances, be certifying different rates by MCO.
Response	The reviewers agree and believe the standard makes clear this is permitted and made no change.
Comment	One commentator recommended that the ASOP explicitly prohibit actuaries from considering state budgetary limitations when setting rates.
Response	The reviewers have added additional guidance related to state initiatives in section 3.2.17.

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Section 3.2.1, Form of the Capitation Rates (Single Rate or Capitation Rate Ranges)	
Comment	Several commentators recommended that the ASOP state or reinforce that the assumptions used to develop rates at each end of the rate range should be attainable and consider the interdependence of various assumptions and not just represent an aggregation of the best or worst case scenarios for each rating variable.
Response	The reviewers believe that the definition of actuarial soundness addresses this issue and made no change.
Comment	One commentator recommended that the rate range width should be required to be disclosed.
Response	The reviewers believe that requiring such a disclosure is beyond the scope of this ASOP and made no change.
Comment	One commentator recommended defining the midpoint of the rate range as the best estimate, and several commentators recommended that further requirements be added to inform the principal (state or MCO) of the effect of the choice of the rate within the rate range.
Response	The reviewers believe such a change would not be appropriate and made no change.
Comment	One commentator recommended that the ASOP clarify that maternity case rate payments and other event based payments are covered by this ASOP.
Response	The reviewers agree and have updated section 3.2.2, Structure of the Medicaid Managed Care Capitation Rates, to also include event based payments.
Comment	One commentator recommended clarifications around assumptions specific to geographic areas and that administrative expenses may be higher on the low end of the rate range than on the high end of the rate range.
Response	The reviewers believe that the definition of actuarial soundness addresses this issue and made no change.
Section 3.2.2, Structure of the Medicaid Managed Care Rates	
Comment	Several commentators recommended that section 3.2.2 clarify that event based (i.e., case rate) payments are also capitation rates.
Response	The reviewers agree that adding event based payments to this section would be helpful and updated the language.
Comment	One commentator recommended that section 3.2.2 reference ASOP No. 12, <i>Risk Classification</i> .
Response	The reviewers agree that such reference would be helpful and added it.
Comment	One commentator recommended that the list of examples should include Medicaid eligibility groups.
Response	The reviewers agree and added “Medicaid eligibility groups” to the list of examples.
Comment	One commentator recommended that “MCO differences” be excluded from the list of examples because it implied that MCOs with inefficient cost structures would be rewarded.
Response	The reviewers note that the listing only provides examples of characteristics that may affect the rating structure. Therefore, no change was made.
Comment	One commentator stated clarification should be provided that not all assumptions need to be developed at the rate cell level, including the standard practice of administrative loads being applied uniformly across rate cells.
Response	The reviewers do not believe that further clarification needs to be provided and made no change.

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Comment	Several commentators believed that the ASOP would require separate administrative loads be developed for each rate cell and recommended not requiring this.
Response	The reviewers believe that the ASOP allows the actuary to use his or her judgment about whether or not a single administrative load, margin, or cost of capital assumption is appropriate for all rate cells. Therefore, no change was made.
Comment	One commentator suggested including a definition regarding a “competitive procurement.”
Response	The reviewers disagree that this definition needs to be included in the ASOP and made no change.
Comment	One commentator requested the inclusion of a definition of “covered services.”
Response	The reviewers believe section 3.2.5, Covered Services, provided appropriate guidance and did not add a definition. However, some clarifications were made to section 3.2.5.
Comment	One commentator requested clarification of the terms “should” or “should consider.”
Response	The reviewers note these terms are discussed in ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , and made no change.
Comment	One commentator stated that language regarding non-state plan services is not appropriate since it is a regulatory issue and not an actuarial requirement.
Response	The reviewers believe that the ASOP provides appropriate guidance regarding the treatment of enhanced or additional benefits in the rate certification process and made no change.
Comment	One commentator stated that data quality issues should be further addressed in the ASOP.
Response	The reviewers believe this ASOP, in conjunction with ASOP No. 23, <i>Data Quality</i> , appropriately addresses data quality and made no change.
Comment	One commentator stated the need for the ASOP to address the impact on third party vendors or providers that may be receiving a sub-capitation payment from the health plan to the provider.
Response	The reviewers believe that financial impacts to third-party vendors are outside the scope of this standard and made no change.
Section 3.2.3, Rebasing and Updating of Rates	
Comment	One commentator suggested that the practice of using interim financial results to develop an experience adjustment was essentially rebasing and this practice should be addressed in section 3.2.3.
Response	The reviewers believe that the existing language appropriately addresses such situations, even though it does not specifically describe this practice. Therefore, no change was made.
Comment	One commentator suggested that competitive procurements were a form of rebasing and this should be addressed in the rebasing section.
Response	The reviewers did not feel that a discussion of competitive procurements was warranted in this section and made no change.
Comment	Several commentators recommended that the ASOP require actuaries to consider the adequacy of the rates in total or by rate cell in deciding whether to rebase.
Response	The reviewers note that rate adequacy is addressed in other areas of the ASOP and, therefore, made no change.
Comment	One commentator recommended that program and benefit changes be a required consideration in rebasing rates.
Response	The reviewers believe this is dependent on specific facts and circumstances, and therefore made no change.

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Comment	One commentator recommended that capitation rate development, including the rebasing of rates, should occur and be distributed to interested parties well in advance of the effective date of rates.
Response	The reviewers believe this recommendation is outside the scope of the ASOP and made no change.
Section 3.2.5, Covered Services	
Comment	One commentator thought that “in lieu of services” should be defined or clarified given that policy and regulatory considerations impact the appropriateness of including these services in the rate development. Another commentator thought that the word “may” should be changed to “should” in the sentence “Non-state plan services may be included in the capitation rate if the service is provided in lieu of a state plan service.” Another commentator thought that this section should clarify that costs incurred for the use of innovative, non-traditional programs that obviate the need for or reduce medical costs and improve patient care should be included as covered services.
Response	The reviewers note section 3.2.5 was divided into two sections in the final ASOP (section 3.2.5, Covered Services, and new section 3.2.6, Special Payments). The reviewers believe the updated sections are clear and appropriate.
Comment	One commentator noted that the sentence “In determining covered services, the actuary should include state plan services that form the basis for the claims experience used to develop the rates” was difficult to read.
Response	The reviewers modified section 3.2.5 and believe the guidance on determining covered services is clear.
Comment	One commentator indicated that the use of the word “consistently” in the sentence “The actuary should also identify any special payments to providers (for example, supplemental payments or bonuses) and make sure that these payments are handled consistently between the base data and the capitation rates” should be modified to reflect that there are situations where there is a change in practice between the base period and rating period.
Response	The reviewers agree and revised this sentence, which is now included in new section 3.2.6, Special Payments.
Comment	One commentator noted that the phrase “enhanced or additional services” should be “enhanced or additional benefits” to be consistent with the definitions.
Response	The reviewers agree and revised the word “services” to “benefits” in this phrase.
Comment	One commentator noted that if a definition for “covered services” is added to the definitions there may be no need to include the words “unless provided for by a waiver” at the end of the section.
Response	The reviewers modified section 3.2.5 and believe the guidance on determining covered services is now clear.
Comment	One commentator asked for further clarification of state plan, non-state plan and in-lieu-of benefits.
Response	The reviewers modified section 3.2.5 and believe the guidance regarding covered services is now clear.
Comment	One commentator asked that the ASOP include a definition regarding “critical access hospitals.”
Response	The reviewers disagree that this definition needs to be included in the ASOP and made no change.

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Section 3.2.7, Other Base Data Adjustments	
Comment	One commentator recommended adding two additional paragraphs related to “area factor adjustments” and “affiliated provider organizations.”
Response	The reviewers disagree that these items should be included in this section. The reviewers believe sections 3.2.2, Structure of the Medicaid Managed Care Capitation Rates; section 3.2.4, Base Data; and section 3.2.9, Claim Cost Trends, adequately address this issue, and therefore made no change.
Comment	One commentator thought that this section should include a section on a base data adjustment for potential increased access in the managed care program versus what was available in a fee-for-service program.
Response	The reviewers disagree and believe section 3.2.9 adequately addresses this issue. Therefore, no change was made.
Comment	Two commentators thought that this section did not address adjustments needed for missing or incomplete encounter data.
Response	The reviewers disagree. The examples in the section 3.2.7(a) are not all-inclusive. Therefore, no change was made.
Comment	One commentator proposed expanding section 3.2.7(a)(1) to read “certain claims or a portion of provider payments are not processed through the same system as the base data;” in order to include consideration for bulk retrospective provider payments such as “pay for performance” incentives that may not be attributable to particular claims.
Response	The reviewers believe this issue does not warrant a specific example and made no change.
Comment	One commentator thought that the sentence “The actuary should consider other base data adjustments, which may include the following:” should be changed to “The actuary should consider other base data adjustments, which should include the following to reflect all applicable costs incurred during the base data period:”
Response	The reviewers believe the language as written is clear and made no change.
Comment	One commentator recommended that section 3.2.7(f) explicitly mention changes in medical practice, including newly approved drugs and devices, as a situation in which base data and capitation rates may need to be adjusted.
Response	The reviewers believe this issue does not warrant a specific example and made no change.
Comment	One commentator recommended that the ASOP be revised to provide that actuaries should disclose to MCOs the methodology, assumptions, and data that serve as the basis for adjustments to base year data. The commentator also recommended that language be added to section 3.2.7 stating that actuaries should avoid using Fee for Service (FFS) data as the basis for the base data adjustments if the FFS data is more than one year removed from the rating year.
Response	The reviewers believe that section 4 of this ASOP and other applicable ASOPs (including ASOP No. 41, <i>Actuarial Communications</i>) provide appropriate guidance regarding disclosures. The reviewers disagree with adding specific instructions around what data may or may not be used to develop base year data adjustments. ASOP No. 23 provides the actuary with guidance for data selection. Therefore, no change was made.

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Section 3.2.8, Claim Cost Trends	
Comment	One commentator suggested that a list of items for developing claim cost trends should be added to this section.
Response	The reviewers believe the level of detail in this section is sufficient and made no change.
Comment	One commentator thought that the actuary should be directed in this section to disclose the basis of trend estimates such as the source, applicability, claims experience, time periods, trend surveys, etc.
Response	The reviewers disagree and believe that section 4 of this ASOP and other applicable ASOPs (including ASOP No. 41) provide appropriate guidance regarding disclosures. Therefore, no change was made.
Comment	One commentator thought that the wording “Trends should be exclusive of other adjustments” indicated that a blending of the utilization component of trend with the adjustment in section 3.2.9, Managed Care Adjustments, was prohibited; yet they felt that if historic managed care data was used to develop the trends, it would be an unnecessary exercise to separate historical utilization trend and managed care savings components.
Response	The reviewers revised the sentence for clarity and believe no further guidance is necessary.
Comment	Two commentators recommended that this section be amended to add a requirement that actuaries should reflect new technological and pharmaceutical advancements in the trend assumptions.
Response	The reviewers believe the level of detail in this section is sufficient and made no change.
Comment	One commentator requested a specific section on network re-pricing and stated this section should specify that the fee schedule used to re-price claims be attainable to the MCOs.
Response	The reviewers believe that this issue is covered by the definition of “actuarial soundness.” Therefore, no change was made.
Section 3.2.9, Managed Care Adjustments	
Comment	One commentator thought that the ASOP should clarify that managed care savings should be documented by category of service and should clarify that the level of managed care adjustments should not be linking to non-medical loads in the rate development.
Response	The reviewers disagree that this wording should be added and made no change.
Comment	One commentator suggested that the ASOP clarify that managed care impacts must be considered in aggregate and not in isolation (for example, reduction in ER utilization may be accompanied by higher primary care utilization, possibly with higher per unit costs in both settings, as delivery of care is managed towards the appropriate setting.).
Response	The reviewers disagree that this wording should be added and made no change.
Comment	Several commentators felt that the words “...adjustments should be attainable in the rating period...” were not sufficient guidance to recognize the various items that can impact the timing of attaining managed care savings and suggested additional wording be added to the ASOP that clarifies the limitations that can cause managed care adjustments to be obtained during the rating period.
Response	The reviewers believe this issue is covered by the definition of “actuarial soundness.” “Therefore, no change was made.
Comment	One commentator thought that the wording “state contractual and operational requirements, and relevant laws and regulations” allowed actuaries to add managed care adjustments due to state budget limitations.
Response	The reviewers added a new section 3.2.17, State Initiatives, to clarify the guidance.

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Comment	One commentator thought that section 3.2.9(b) should be revised to “current characteristics and desired changes in those characteristics of the....”
Response	The reviewers believe the language is clear and, therefore, made no change.
Comment	Several commentators recommended that wording should be added to this section indicating that base data adjustments need to be done in a transparent and data-driven manner.
Response	The reviewers believe that transparency and use of underlying data are appropriately covered in this standard as well as ASOP Nos. 23 and 41 and, therefore, made no change.
Comment	One commentator recommended adding language that the actuary should make sure that managed care savings are not double counted with trend assumptions.
Response	The reviewers note this is addressed in new section 3.2.9, Claim Cost Trends. Therefore, no change was made.
Comment	One commentator thought that this section did not distinguish between changes from base year data that are likely to be achievable when a new Medicaid managed care program is implemented and managed care efficiencies have not previously been implemented and the nature and scope of changes that can be expected when a program is well-established and the baseline data already reflect the impact of Medicaid health plan performance.
Response	The reviewers note this is addressed in section 3.2.9(c) and made no change.
Section 3.2.11, Non-Medical Expenses	
Comment	One commenter suggested that the ASOP recommend a correlation between underwriting gain and the level of risk or uncertainty.
Response	The reviewers agree and have added clarifying language to section 3.2.11(b).
Comment	One commentator suggested that medical management costs should be considered medical expenses and not administrative costs.
Response	The reviewers note the ASOP only lists medical management as a possible administrative expense. Therefore, no change was made.
Comment	One commentator expressed concern that the ASOP requires developing distinct rates for each MCO based on administrative expenditures and profit or non-profit status.
Response	The reviewers note that new section 3.2.12, Non-Medical Expenses, states non-medical expenses <i>may</i> vary by MCO and, therefore, made no change.
Comment	One commenter expressed concern over requiring the consideration of cost of capital and stated that it should be left to the actuary to consider.
Response	The reviewers believe the updated ASOP includes appropriate consideration of cost of capital in section 2.1, Actuarially Sound/Actuarial Soundness and new section 3.2.12 (b), Underwriting Gain.
Comment	One commentator expressed concern about establishing different non-medical expenses by rate cell.
Response	The reviewers modified the language to remove “for each rate cell” to avoid implying that the non-medical expenses were required to vary by rate cell.
Section 3.2.11(a), Administration	
Comment	One commenter recommended clarifying what is an appropriate administrative load for Medicaid managed care and what are acceptable data sources or information to use.
Response	The reviewers believe that such clarification is not appropriate in this ASOP and therefore made no change

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Section 3.2.11(a)(1), Determination of Administrative Expenses	
Comment	One commentator suggested additional requirements for the actuary in determining the administrative payments to affiliated organizations to make sure they are reasonable and appropriate.
Response	The reviewers believe section 3.2.11 and the definition of “actuarial soundness” appropriately address this concern and made no change.
Comment	One commenter recommended deleting section 3.2.11(a)(1) on administrative expenses and stated that it would limit states’ ability to place limits on administrative costs.
Response	The reviewers modified the language from “should” to “may” and also made other changes to this section to clarify guidance.
Comment	One commentator suggested that several of the considerations for administrative expenditures under 3.2.11(a)(1) should not be required and instead be made permissible.
Response	The reviewers modified the language from “should” to “may” and also made other changes to this section to clarify guidance.
Comment	One commentator suggested that the complexity of providing services for certain populations (such as aged or disabled enrollees) should be required as a consideration of administrative expenditures.
Response	The reviewers note that the list is not meant to be all inclusive. The reviewers believe the ASOP provides appropriate guidance and made no change.
Section 3.2.11(a)(2), Types of Administrative Expenses	
Comment	One commentator suggested adding contract provisions as a type of administrative expenditure.
Response	The reviewers believe the ASOP provides appropriate guidance and made no change.
Section 3.2.11(a)(2)(i), Types of Administrative Expenses	
Comment	One commentator suggested deleting the phrase regarding “competitive environment.”
Response	The reviewers agree and made the change.
Section 3.2.11(a)(2)(iv), Types of Administrative Expenses	
Comment	One commentator suggested defining “general corporate overhead.”
Response	The reviewers disagree and made no change.
Section 3.2.11(b), Underwriting Gain	
Comment	Several commentators recommended “cost of capital” be defined and explained how this related to margins for risk or underwriting gain.
Response	The reviewers believe the ASOP provides appropriate guidance and made no change.
Comment	One commentator recommended that the actuary must consider investment income when determining the underwriting gain.
Response	The reviewers believe the use of the word “may” is appropriate for the ASOP and made no change.
Comment	One commentator recommended addressing the importance of allowing negative underwriting gain margins in rate development.
Response	The reviewers believe the ASOP adequately addresses negative underwriting gain and, therefore, made no change.

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Comment	Several commentators suggested that the effects of risk sharing arrangements, performance withholdings, and minimum medical loss ratios should be addressed in determining the underwriting gain assumption.
Response	The reviewers added language to clarify the guidance.
Comment	One commentator recommended that the margin for the underwriting gain should be explicit in the capitation rate.
Response	The reviewers believe the ASOP provides appropriate guidance and made no change.
Comment	One commentator asked for guidance on how an appropriate underwriting gain provision was determined and for requirements about disclosing negative underwriting gain provisions.
Response	The reviewers believe it is beyond the scope of the ASOP to specify how the underwriting gain provision should be determined or deemed appropriate. The reviewers note that section 4 of the ASOP provides guidance for actuarial communications and disclosures, including specific mention of disclosure of negative underwriting gains. Therefore, no change was made.
Comment	One commentator recommended that the ASOP address new Medicaid managed care populations in regard to the underwriting gain provision.
Response	The reviewers disagree that additional guidance is needed and made no change.
Comment	One commentator asked whether payment delays should also be considered in the standard.
Response	The reviewers note that “cash flow patterns” are addressed in section 3.2.11(b). Therefore, no change was made.
Section 3.2.11(c), Income Taxes	
Comment	One commentator recommended that section 3.2.11(c) be revised so that actuaries may consider income taxes, but would not be required to do so.
Response	The reviewers believe this is an appropriate consideration in setting Medicaid managed care capitation rates and made no change.
Comment	One commenter recommended deleting section 3.2.11(c) and making section 3.2.11(d) permissive at the state's discretion.
Response	The reviewers disagree and made no change.
Section 3.2.11(d), Taxes, Assessments, and Fees	
Comment	One commentator expressed concern that section 3.2.11(d) was too specific relative to the rest of the ASOP and that the actuary would be required to make several explicit forecasts that the actuary may not be able to do.
Response	The reviewers believe this section does not place an unreasonable requirement on the actuary and made no change.
Section 3.2.12, Risk Adjustment	
Comment	Several commentators recommended that the risk adjustment section refer to section 3.2.7 or include discussion of data quality and appropriateness for risk adjustment.
Response	The reviewers believe that additional guidance is not necessary since ASOP No. 23 applies and is referenced in section 3.4, Documentation, and ASOP No. 45, <i>The Use of Health Status Based Risk Adjustment Methodologies</i> , is referenced in section 3.2.12, Risk Adjustment. Therefore, no change was made.
Section 3.2.14, Performance Withholds/Incentives	
Comment	Several commentators suggested the actuary should document any differences between the ASOP and CMS requirements.
Response	The reviewers note that section 4 of this ASOP provides guidance in this area.

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Comment	Several commentators felt the language regarding including withhold amounts that are reasonably achievable was overly prescriptive while others felt the language did not provide enough guidance.
Response	The reviewers believe the language is appropriate and made no change.
Comment	One commentator recommended that data related to the characteristics of the covered population be considered when actuaries evaluate the effect that performance withhold and incentives could have on plan costs. The commentator also stated there should be clear expectations communicated to the MCO up front regarding targets and improvement goals before the rate period begins.
Response	The reviewers did not believe adding this consideration or required communication was necessary or appropriate. Therefore, no change was made.
Section 3.2.15, Minimum Medical Loss Ratios	
Comment	One commentator felt a statement should be added recognizing that minimum medical loss ratio provisions increase the level of risk borne by the MCO that the actuary should consider when determining the underwriting gain provision of the capitation rates.
Response	The reviewers note this is adequately addressed in this section and made no change.
Section 3.3, Qualified Opinion on Actuarial Soundness	
Comment	A commentator felt that an entire actuarial opinion should not be qualified when a negative underwriting gain is utilized.
Response	The reviewers note a qualified opinion is meant to highlight special circumstances with respect to actuarial soundness within the rate certification. Section 3.2.12(b), Underwriting Gain, requires the disclosure of a negative underwriting gain assumption. The reviewers changed the language from “for example” to “further”. However, no other change was made.
Section 3.4, Documentation	
Comment	One commentator requested that the actuary be required to test capitation structures for appropriateness using emerging experience.
Response	The reviewers believe the ASOP provides appropriate guidance and made no change.
Comment	Several commentators requested that the actuary be required to provide appropriate documentation to the MCOs.
Response	The reviewers note the distribution of the actuary’s work product and documentation is governed by ASOP No. 41 and other related ASOPs. Therefore, no change was made.
Comment	One commentator asked what CMS regulations actuaries should consider in their documentation.
Response	The reviewers believe that listing all specific regulations the actuary should consider is outside the scope of this ASOP and made no change.



**Actuarial Standard
of Practice
No. 50**

**Determining Minimum Value and Actuarial Value under
the Affordable Care Act**

**Developed by the
Actuarial Value/Minimum Value Task Force of the
Health Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2015**

Doc. No. 182

ASOP No. 50—September 2015

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ASOP No. 50—September 2015

September 2015

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Determining Minimum Value and Actuarial Value under the Affordable Care Act

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 50

This document is the final version of ASOP No. 50, *Determining Minimum Value and Actuarial Value under the Affordable Care Act*.

Background

Section 1302 of the Affordable Care Act (ACA) establishes the use of an actuarial value to categorize health insurance plans into bronze, silver, gold, and platinum tiers, specify a minimum level of coverage, and help consumers compare different plan designs and cost-sharing provisions. Similarly, Section 1401 of the ACA added Section 36B to the Internal Revenue Code of 1986, which creates a minimum value requirement for employer-sponsored plans (defined in terms of the health insurance plan's share of total costs). Although a practice note provides information on the subject of determining minimum value and actuarial value under the ACA, no guidance for actuaries on the subject exists other than the regulation. Therefore, the ASB requested that the ASB Health Committee explore a potential ASOP to provide guidance to actuaries performing these tasks. As a result, the ASB Health Committee issued a discussion draft in April 2014 to gather feedback on such a potential ASOP.

A question regarding whether an ASOP was necessary for this subject was posed in the discussion draft. This question generated comments on both sides of the issue. Following discussions among the reviewers—which included the task force, Health Committee, and ASB—the decision was made to issue an exposure draft.

Exposure Draft

The exposure draft of this ASOP was approved in December 2014 with a comment deadline of May 1, 2015. Fourteen comment letters were received and considered in making clarifications that were reflected in this final ASOP. For a summary of the issues contained in the comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard but did not result in substantive changes to the standard.

The ASB thanks everyone who took the time to contribute comments and suggestions on both the discussion draft and the exposure draft of this ASOP.

The ASB voted in September 2015 to adopt this standard.

ASOP No. 50—September 2015

Task Force on Actuarial Value/Minimum Value under the Affordable Care Act

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment.

The ASB's goal is to set standards for appropriate practice for the U.S.

**DETERMINING MINIMUM VALUE AND ACTUARIAL VALUE UNDER THE
AFFORDABLE CARE ACT**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries performing professional services with respect to determining the **actuarial value (AV)** of a **health insurance plan** and testing whether the **minimum value (MV) requirement** is met in accordance with the Affordable Care Act (ACA).
- 1.2 **Scope**—This standard applies to actuaries performing professional services with respect to calculating **actuarial values** and testing **minimum value requirements** in accordance with the ACA and related regulations, specifically for purposes of (1) categorizing individual and small group **health insurance plans** into metal levels; (2) testing whether employer-sponsored **health insurance plans** meet the federal **minimum value requirements**; or (3) making any required certifications.

This ASOP does not apply to actuaries performing calculations of actuarial values for other purposes. For example, the calculation of an **actuarial value** used for converting allowed costs to plan-incurred costs when calculating plan-level premiums is not covered by the standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial work product covered by this standard's scope issued on or after January 31, 2016.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Actuarial Value (AV)**—A measure of the proportion of total allowed medical costs for a specified population that the **health insurance plan** is contractually obligated to pay.

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- 2.2 **AV Calculator (AVC)**—Data and methodology released or approved by Health and Human Services (HHS) that is used to determine the **AV** of a **health insurance plan**.
- 2.3 **AVC-AV**—The **AV** calculated using the **AVC**, including any adjustments for **non-standard plan designs**.
- 2.4 **Essential Health Benefits (EHBs)**—The specific items and services that the ACA requires issuers to cover in benefit plans offered in the individual and small group markets. EHBs must include any benefit defined by the Secretary of Health and Human Services. In addition, some EHBs may be defined by individual states.
- 2.5 **Health Insurance Plan**—A contract or other financial arrangement providing hospital, medical, prescription drug, dental, or vision benefits, including a self-insured employer plan.
- 2.6 **Minimum Value (MV) Requirement**—The minimum required **AV** for certain employer-sponsored **health insurance plans**, as defined by regulations issued pursuant to the ACA.
- 2.7 **MV Calculator (MVC)**—Data and methodology released by HHS that is used to determine whether the **MV requirement** is met.
- 2.8 **MVC-AV**—The **AV** calculated using the **MVC**, including any adjustments for **non-standard plan designs**.
- 2.9 **Non-Standard Plan Designs**—Plan designs that include benefits not reflected in the **AVC** or **MVC**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Use of AVC or MVC**—The actuary should use the appropriate calculator when calculating the actuarial value.

HHS requires use of an **AVC** for certain **health insurance plans** offered in the individual and small group markets for the purpose of determining metal levels of coverage.

HHS and the Internal Revenue Service (IRS) require use of the **MVC** to determine whether an employer-sponsored **health insurance plan** meets minimum coverage requirements, unless it is determined that the safe harbor requirements established by HHS or the IRS are met.
- 3.2 **Exceptions to the AVC**—If a **health insurance plan**'s design is a **non-standard plan design**, the actuary should determine the plan's **AVC-AV** using one of the following options:

- a. adjust the inputs to the **AVC** in such a way that the results are consistent with the actual coverage being provided (i.e. estimating a fit of the plan design into the **AVC**); or
 - b. use the **AVC** to determine the **AVC-AV** for the plan provisions that are consistent with the calculator's parameters and then make appropriate adjustments.
- 3.3 **Exceptions to the MVC**—If a **health insurance plan**'s design is a **non-standard plan design** and the safe harbor test is not met, then the actuary should determine the plan's **MVC-AV** using one of the following options:
- a. adjust the inputs to the **MVC** in such a way that the results are consistent with the actual coverage being provided (i.e. estimating a fit of the plan design into the **MVC**); or
 - b. use the **MVC** to determine the **MVC-AV** for the plan provisions that are consistent with the calculator's parameters and then make appropriate adjustments.
- 3.4 **Evaluating Non-Standard Plan Designs**—The **AVC** and **MVC** do not accommodate all plan designs. In situations of a non-standard plan design, the ACA requires the actuary to evaluate the plan and to certify the value of the plan. When evaluating **non-standard plan designs**, the actuary should confirm that the data, methods, and assumptions used are consistent with those underlying the applicable **AVC** or **MVC**, as required by regulations. For example, the actuary should use a model that is based on data for a population that is consistent with the population underlying the applicable **AVC** or **MVC**, where possible.
- 3.5 **Reasonableness of Assumptions for Non-Standard Plan Designs**—The actuary should review the assumptions used for making adjustments for **non-standard plan designs**. These assumptions should be reasonable in the aggregate and for each of these assumptions individually. The actuary should determine whether these assumptions are reasonable based on the actuary's professional judgment, using relevant information available to the actuary.
- 3.6 **Unreasonable Results**—In some circumstances, the **AVC** or **MVC** may, in the actuary's professional judgment, produce unreasonable results. The actuary may use unreasonable results from the **AVC** or **MVC** if required to do so by regulators. In such cases, the actuary should document within the actuarial memorandum the nature of the unreasonable results.

When the **AVC** or **MVC** produces an unreasonable result for either a standard plan design or a **non-standard plan design**, the actuary should document the value of the unreasonable result, the plan design used to produce the **AV** before adjustments for non-

standard plan design, why the actuary considered the result unreasonable, and by what authority the actuary was required to use the unreasonable result.

If the unreasonable result was after adjustment for a **non-standard plan design**, the actuary should document the approach used to develop the adjusted **AV**.

3.7 **Documentation**—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41, *Actuarial Communications*. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.1 of this ASOP.

The actuary should document results from the **AVC** or **MVC** and the plan design used to produce the **AV** before adjustments for non-standard plan design.

In addition, for a **non-standard plan design**, the actuary should document the approach used to develop the adjusted **AVC-AV** or **MVC-AV**. The actuary should indicate the data that was used and its source, the rationale for using that data, and how it was used to calculate the adjustments;

Section 4. Communications and Disclosures

4.1 **Actuarial Certifications**—When issuing an actuarial certification, the actuary should include the following information:

- a. a statement that the actuary is a member of the American Academy of Actuaries, meets the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States promulgated by the American Academy of Actuaries, and has the education and experience necessary to perform the work;
- b. a statement describing the actuary's relationship to the issuer or the employer;
- c. the purpose of the certification, including whether the certification is for an employer-sponsored **health insurance plan(s)** or for a plan(s) offered in the individual and small group markets;
- d. the plan year for which the **AVC-AV** or **MVC-AV** certification applies;
- e. a statement that the **AVC-AV** or **MVC-AV** was determined in accordance with the ASOPs established by the ASB and with applicable laws and regulations; and
- f. a certification that the plan meets the minimum requirement for the **MVC-AV** determination in the case of an employer-sponsored health insurance plan; or a certification that the metal levels were appropriately assigned based on

applicable law, in the case of plans offered in the individual and small group markets.

When issuing actuarial certifications related to work subject to this standard, the actuary should also produce an actuarial memorandum.

- 4.2 **Other Communications and Disclosures**—When issuing other actuarial communications related to work subject to this standard, including the actuarial report accompanying a certification, the actuary should refer to and follow ASOP Nos. 23, *Data Quality*, and 41. In addition to the disclosures required by ASOP Nos. 23 and 41, the actuary should include the following, as applicable:
- a. for a **non-standard plan design**, the approach and assumptions used to develop the adjusted **AVC-AV** or **MVC-AV**. The actuary should indicate the data that was used and its source, the rationale for using that data, and how it was used to calculate the adjustments;
 - b. a statement that the **AVC-AV** or **MVC-AV** is based on prescribed methodology and, therefore, may not reasonably reflect the actuary's estimate of the portion of allowed costs covered by the **health insurance plan**;
 - c. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
 - d. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - e. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes only and is not part of the standard of practice.

Background

Section 1302 of the Affordable Care Act (ACA) establishes the use of actuarial value to categorize health insurance plans into bronze, silver, gold, and platinum metal levels. Section 1401 of the ACA adds Section 36B to the Internal Revenue Code of 1986, which creates a minimum value requirement for employer-sponsored health insurance plans.

In certain circumstances, ACA regulations require an actuary who is a member of the American Academy of Actuaries to certify that the actuarial value calculation is in accordance with generally accepted actuarial principles and methodologies.

Section 1302 of the ACA establishes the use of actuarial value (AV) to help consumers compare different plan designs and cost-sharing provisions. Similarly, Section 1401 of the ACA added Section 36B to the Internal Revenue Code of 1986, which creates a minimum value (MV) requirement for employer-sponsored health insurance plans. The AV of a health insurance plan is a measure of the percentage of health care costs, on average, that the plan is expected to cover. AV is a measure of the level of a plan’s cost sharing provisions, whereas MV is the minimum AV that certain employer-sponsored health insurance plans must provide.

In the individual and small group markets, the AV is defined as the ratio of (i) total expected payments by the plan for essential health benefits (EHBs) computed in accordance with the plan’s cost-sharing provisions for a standard population over (ii) the total allowed costs for the EHB that the standard population is expected to incur. Benefits that are not considered part of EHB are not included in the AV calculation.

AV is a key concept in the ACA. AV is used to categorize health insurance plans sold in the individual and small group markets into coverage tiers. These tiers are referred to as “metal levels”—bronze, silver, gold, and platinum—with AVs of 60 percent, 70 percent, 80 percent, and 90 percent, respectively. Federal tax credits for certain individuals and families with qualifying incomes are tied to the cost of a silver plan. Federal cost-sharing reductions for certain individuals and families with qualifying incomes are also defined in terms of AV.

The benefits offered by applicable large employers will be assessed to see whether or not they can be considered to meet the “minimum value” requirement, currently set at 60 percent. In the employer market, the MV requirement is a component of the determination of whether an employer is subject to a penalty.

Current Practices

The AV Calculator (AVC) and Minimum Value Calculator (MVC) were developed using standardized populations that are applied across all geographic locations. The calculators take into account cost-sharing parameters; the AVC accounts for induced demand in the underlying assumptions while the MVC does not. Beginning in 2015, a state may elect to utilize state-specific tables in the AVC, with HHS pre-approval.

The AV calculated with the AVC and MVC may differ from AVs that may be used in pricing, and several items are reflected in health insurance plan premiums that are not considered in the Federal AVC/MVC. These items include, but are not limited to, provider negotiated payments, administrative costs, and the impact of care management and utilization management programs. In addition, the calculators use a standard population with a prescribed nationwide data set and specific assumptions on price and utilization, which may differ significantly from a specific health insurance plan's population, price and utilization assumptions, and other assumptions used to develop premium.

The AVC and MVC are not intended to be used as pricing tools. As a result, two plan designs with the same Federal AV/MV may not have the same premium for the reasons stated above. The intent of the AV and MV calculation process is to apply a standardized population and cost structure.

Additional Resources

The following resources may assist in furthering actuaries' understanding of AV and MV.

- The Patient Protection and Affordable Care Act
<http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>
- The Center for Consumer Information & Insurance Oversight, Regulations and Guidance
<http://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/>
- American Academy of Actuaries, Health Council Practice Note, *Minimum Value and AV Determinations Under the Affordable Care Act*, April 2014
http://www.actuary.org/files/MVPN_042314.pdf
- Final HHS Rule for Standards Related to Essential Health Benefits, AV, and Accreditation
<http://www.gpo.gov/fdsys/pkg/FR-2013-02-25/pdf/2013-04084.pdf>
- Minimum Value of an Employer-Sponsored Health Plan, IRS Notice 2012-31
<http://www.irs.gov/pub/irs-drop/n-12-31.pdf>

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of proposed ASOP, *Determining Minimum Value and Actuarial Value under the Affordable Care Act*, was issued in December 2014 with a comment deadline of May 1, 2015. Fourteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force on Actuarial Value/Minimum Value under the Affordable Care Act and the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the task force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term “reviewers” in appendix 2 includes the Task Force, the Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	One commentator suggested providing a “crosswalk map” that would allow the MV calculator (MVC) to become significantly more useful for the detailed benefits of each acceptable EHB standard into the row categories of the MVC.
Response	The reviewers believe this is beyond the scope of the standard and made no change.
Comment	One commentator suggested that the ASOP should add a discussion regarding how regulators define the term “substantial” when referring to inpatient hospitalization and physician services.
Response	The reviewers believe interpreting the regulations is beyond the scope of the standard. Therefore, no change was made.
Comment	One commentator suggested separate ASOPs for AV and MV be considered.
Response	The reviewers believe that the coverage of these related topics in a single ASOP is appropriate and made no change.
Comment	Several commentators believed in-network cost sharing and tiered networks should be specifically discussed in this ASOP.
Response	The reviewers believe that specific non-standard benefits are beyond the scope of the ASOP and made no change.
Comment	Several commentators suggested the ASOP should provide guidance about the MV calculation by describing the responsibilities of the actuary to include awareness of and compliance with all applicable regulations associated with the required covered services.
Response	The reviewers note that the <i>Code of Professional Conduct</i> (the Code) requires that “an actuary must be familiar with, and keep current with, not only the Code but also applicable law and rules of professional conduct for the jurisdictions in which the actuary renders actuarial services.” Therefore, no change was made.

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Comment	One commentator suggested that health insurance plans use an alternative method under 45 CFR 156.135(b) that requires certification by an actuary only in specific cases where the health insurance plan's design isn't compatible with the AV calculator (AVC). The commentator also suggested the ASB consider the guidance the CMS has issued and reference all such sources of guidance and instructions in the final draft of the ASOP.
Response	The reviewers believe the standard contains appropriate references to the requirements and made no change.

TRANSMITTAL MEMORANDUM

1. Does this ASOP provide appropriate guidance to actuaries who are determining actuarial values for purposes of meeting the various ACA AV and MV requirements?

Comment	One commentator indicated that there were some clarity issues associated with the use of the term "specific population" in section 2.1 and with the definition of health insurance plan in section 2.5.
Response	The reviewers believe the ASOP is clear and made no change.
Comment	Another commentator suggested adding the specification that a plan with an aggregate family deductible is a non-standard plan design and that the actuary should consider this fact in determining whether a plan meets the MV standard and requirement.
Response	The reviewers believe the ASOP provides guidance for handling non-standard plan design, in general, which actuaries can apply to specific situations and, therefore, made no change.
Comment	One commentator suggested consideration of whether the ASOP should address an actuary's obligations for ensuring that each plan is administered exactly how the plan was evaluated.
Response	The reviewers believe that validating the administration of plan design was outside the scope of this ASOP and made no change.
Comment	One commentator suggested guidance be provided regarding evaluation of certain plans that are substantially missing coverage categories.
Response	The reviewers believe the ASOP provides guidance for handling non-standard plan design, in general, which actuaries can apply to specific situations and, therefore, made no change.

2. Is the ASOP clear that it applies only to the calculation of actuarial value as required by the ACA, and not to other uses and determinations of actuarial value?

Comment	Citing section 1.1, Purpose, section 1.2, Scope, and the draft as a whole, all commentators believed the purpose of the ASOP to be clear.
Response	The reviewers agree.

3. Do the descriptors AVC-AV and MVC-AV in sections [2.3] and [2.8] add clarity to the ASOP? We note that the American Academy of Actuaries' practice note uses the terms "Metal AV" and "MV" for these two values.

Comment	The majority of commentators believed that the descriptors AVC-AV and MVC-AV are clear and add clarity to the ASOP.
Response	The reviewers agree.
Comment	One commentator stated that the definitions for AVC-AV and MVC-AV consider future changes and broadened functionality.
Response	The reviewers believe the language is sufficiently broad to account for future changes and made no change.

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4. Is the guidance of the ASOP sufficient for situations where the actuary does not agree with the determination of the AV made by the AV or MV calculator?	
Comment	The majority of the commentators agreed that the guidance of the ASOP is sufficient for situations of disagreement with the determination of the AV made by the calculators
Response	The reviewers agree.
Comment	Commentators suggested that alternative language be used in section 3.6 where the exposure draft states that “the actuary should consider documenting....” The commentators suggested that this be written as follows: “the actuary should document...”
Response	The reviewers agree and made the suggested change.
Comment	One commentator stated that in circumstances where an actuary does not agree with another actuary’s work in regards to metal level compliance (AVC-AV), or the pass/fail opinion for AVC-MV evaluations, timely notification is desirable.
Response	The reviewers believe ASOP No. 41, <i>Actuarial Communications</i> , and the Code adequately address issues of communication and professional courtesy, and made no change.
5. Should the title of this proposed ASOP be changed to be more specific regarding testing of minimum values? If so, what change should be made?	
Comment	Nearly all commentators believed no change was needed in regards to the title of the ASOP. One commentator suggested the title be changed to “Determining Actuarial Value and Testing Minimum Value Requirements of the Affordable Care Act.”
Response	The reviewers agree that the suggested alternative title would also be appropriate but opted not to make a change.
6. Is the detail proposed for a certification in section 4 appropriate? Should additional items be added?	
Comment	Most commentators believed the detail for certification in section 4 is appropriate. Several commentators also desired the certification be accompanied by documentation in the plan filing, along with a summary of the plan design.
Response	The reviewers believe the current language, when considered in concert with ASOP No. 41 provides appropriate guidance. Therefore, no change was made.
Comment	One commentator suggested that the ASOP should require an actuarial certification of both the AVC and the MVC, with such certification including appropriate disclosures as required by ASOP No. 23, <i>Data Quality</i> , as well as specific disclosures on the testing of any specific implementations such as the Excel spreadsheet provided by HHS currently.
Response	The reviewers believe development and testing of the AVC and MVC is outside of the scope of this ASOP and made no change.
Comment	One commentator believed that the ASOP should make it clear when either an AV or MV calculation is necessary.
Response	The reviewers believe the ASOP is clear, and note that Federal and State regulations will determine when an MV or AV calculation is necessary. Therefore, no change was made.
Comment	One commentator requested consideration of all plan design elements, not only those captured within the MVC and AVC.
Response	The reviewers believe the ASOP provides guidance for handling non-standard plan design, in general, which actuaries can apply to specific situations and, therefore, made no change.

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SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	Several commentators suggested that the adjective “large” when referring to employer size was not necessary. In addition, one commentator recommended more inclusive language and clarity towards listing self-insured health insurance plans without reference to “size.”
Response	The reviewers agree and made the change.
Comment	One commentator requested additional guidance for self-insured small group cases and clarification of whether the MVC or AVC should be used for groups that self-insure.
Response	The reviewers believe the ASOP is clear, and note that Federal and State regulations will determine when an AV or MV calculation is necessary. Therefore, no change was made.
Comment	Several commentators recommended that the scope be expanded to include the development and documentation of the actuarial calculators.
Response	The reviewers believe the development, documentation, and testing of the AVC and MVC is outside of the scope of this ASOP and made no change.
SECTION 2. DEFINITIONS	
Section 2.1, Actuarial Value (AV)	
Comment	Two commentators noted that the AV is required to be computed for a standard population and not the population of a specific plan. The use of “specified population” in this section may imply that the AV may change based on the population of a plan which is not the intent of the statute.
Response	The reviewers disagree and made no change. Section 2.1 is meant to be a general definition of “actuarial value.”
Section 2.2, AV Calculator (AVC)	
Comment	Due to possible change in the future, one commentator believed that the AVC should be defined as the data and methodology released by HHS to determine the AV of a plan, as required by current regulation.
Response	The reviewers agree and made the change.
Section 2.3, AVC-AV	
Comment	Several commentators suggested the modification that “actuarial value” be capitalized in this section.
Response	The reviewers agree but substituted the acronym “AV” that was established in section 2.1.
Section 2.5, Health Insurance Plan	
Comment	One commentator believed that the definition of “health insurance plan” is too broad and its application would include specific excepted benefits plans under Federal Regulations even though they are not subject to AV or MV calculations.
Response	The reviewers believe section 1.2, Scope, addresses this issue and made no change.
Section 2.7, MV Calculator (MVC)	
Comment	One commentator suggested that the definition be limited to data and methodology released by HHS rather than the specific Excel implementation.
Response	The reviewers agree and made the change.

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Section 2.8, MVC-AV	
Comment	Similarly to section 2.3, several commentators suggested that “actuarial value” be capitalized.
Response	The reviewers agree but substituted the acronym “AV.”
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	Several commentators requested an additional item in section 3 referencing materiality, such as stating that the setting of assumptions or evaluation of plan design attributes should consider their materiality in light of the purpose of the assignment.
Response	The reviewers note that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , section 2.6, states that “when evaluating materiality, the actuary should consider the purposes of the actuary’s work and how the actuary anticipates it will be used by intended users...The guidance in ASOPs need not be applied to immaterial items.” The reviewers believe this guidance appropriately covers “materiality,” and therefore made no change.
Section 3.1, Use of AV or MV Calculator	
Comment	One commentator suggested that the ASOP should make clear that, in the event safe harbor requirements were met for an MV determination, an actuary is not required to be involved with the determination and calculation of the MV.
Response	The reviewers agree and added clarifying language.
Comment	Several commentators believed that the term “affordable insurance exchanges” isn’t widely used and suggested alternate language.
Response	The reviewers deleted the “affordable insurance exchanges” language from this section, as it was not needed.
Comment	Several commentators suggested that “Except as noted in 3.2” and “Except as noted in 3.3” be added to the section.
Response	The reviewers believe that because sections 3.2 and 3.3 are titled “Exceptions to the AVC” and “Exceptions to the MVC,” respectively, that it is clear that there are exceptions. Therefore, no change was made.
Comment	One commentator recommended that the ASOP provide more guidance on what approaches might be appropriate to normalize data to a consistent population for use in making adjustments to either the input or output from the calculators.
Response	The reviewers believe that providing specific guidance for normalizing the data is beyond the scope of this ASOP and made no change.
Comment	One commentator suggested that the sentence “The actuary should use the appropriate calculator when calculating the actuarial value” be modified to “The actuary should use the appropriate calculator for the appropriate plan year when calculating the actuarial value.”
Response	The reviewers believe the language is clear regarding the choice of appropriate calculator and made no change.
Section 3.4, Evaluating Non-Standard Plan Designs	
Comment	Several commentators observed that the AVC and MVC don’t anticipate all plan designs.
Response	The reviewers agree but believe the standard provides appropriate guidance regarding the evaluation of non-standard plan designs.

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Section 3.5, Reasonableness of Assumptions for Non-Standard Plan Designs	
Comment	One commentator suggested adding a comment regarding materiality to the section. The commentator specifically suggested altering the second sentence to read “These assumptions should be reasonable in relation to the materiality of the assumption on the plan’s AV or MV.”
Response	The reviewers believe the current language is appropriate and made no change. For additional information on materiality, see ASOP No. 1, section 2.6.
Section 3.6, Unreasonable Results	
Comment	Several commentators stated that the use of the term “AV” in this section is confusing and suggested that AV be spelled out as “actuarial value” in order to avoid association with AV and MV calculations.
Response	The reviewers believe the current language is appropriate since AVC-AV and MVC-MV are defined, and made no change.
Comment	One commentator recommended that in order to strengthen the guidance in this section, the words “considering documenting” should be replaced with “document” in both cases it arises.
Response	The reviewers agree and made the change.
Comment	One commentator suggested modifying the paragraph to read “In some circumstances, the AVC or MVC may, in the actuary’s professional judgment, produce unreasonable results. In such cases, the actuary may make adjustments in addition to the stated options in section 3.2 and 3.3 for plan design attributes. The actuary may use what they have deemed unreasonable results if required to do so by regulators.” The commentator also stated that the last two paragraphs of section 3.6 were redundant.
Response	The reviewers believe the current language is appropriate in light of the regulatory requirements. Sections 3.2 and 3.3 already cover allowable adjustments for non-standard plan designs. The reviewers note that the last two paragraphs in section 3.6 address unreasonable results before and after applying such allowable adjustments, respectively. Therefore, no changes were made.
Comment	One commentator recommended modifying the sentence “The actuary may use unreasonable results if required to do so by regulators” to “The actuary should make adjustments to inputs/outputs if the results are unreasonable unless required not to do so by regulators.”
Response	The reviewers note that sections 3.2 and 3.3 cover allowable adjustments for non-standard plan designs and made no change.
Section 3.7, Documentation	
Comment	One commentator suggested that the ASB consider whether section 3.7 applies also to actuaries involved with the development of the AV and MV calculators.
Response	The reviewers believe that the development of the AVC and MVC by regulators is outside the scope of this ASOP, and made no change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Certifications	
Comment	One commentator suggested including a sentence in this section that reflects that separate actuarial reports need not be created, if such documentation is included in another report.
Response	The reviewers believe that the definition of “actuarial report” in ASOP No. 41 is sufficiently broad to allow for a scenario where a separate report is not needed. Therefore, no change was made.

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Comment	One commentator stated that based upon requirements by law for actuaries to use the AVC/MVC, an actuarial certification should indicate a reliance on a regulatory tool. The commentator recommended the use of language that clarifies that the actuary is certifying the numbers based on the calculator and not the calculator itself.
Response	The reviewers believe that given that the law requires the use of the calculators and the narrow scope of this ASOP, that such a reliance statement should not be required. The reviewers also note that the guidance does not preclude making such a reliance statement. Therefore, no change was made.

Section 4.2, Other Communications and Disclosures

Comment	Several commentators suggested that this section should contain the following statement, “The actuary should indicate the data that was used and its source (for example, HHS or state data) to calculate adjustments to the calculator results, the rationale for using the data, and how it was used to calculate the adjustments.”
Response	The reviewers broadened the language to provide guidance that the actuary should identify the data used and its source.

APPENDIX

Comment	One commentator recommended that language in the “Current Practices” section be strengthened to read, “The actuarial value calculated with the AVC and MVC is likely to differ from actuarial values that may be used in pricing...”
Response	The reviewers believe the current language indicating the AVC and MVC may differ from pricing AVs is appropriate. The reviewers note that the “Current Practices” section identifies reasons why the actuarial values calculated with the AVC and MVC could differ from an actuarial value used for pricing. Therefore, no change was made.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 51**

**Assessment and Disclosure of Risk
Associated with Measuring Pension Obligations and Determining
Pension Plan Contributions**

**Developed by the
Pension Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2017**

Doc. No. 188

ASOP No. 51—September 2017

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September 2017

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 51

Background

This document is the final version of ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*.

The Pension Committee has been reviewing all of the pension-related standards and has developed this standard to provide guidance regarding the assessment and disclosure of pension risk as part of the larger review project. Section 3.16 of ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, revised December 2013, provides guidance to an actuary whose assignment includes an analysis of the potential range of future pension obligations, periodic costs, actuarially determined contributions, or funded status. Section 4.1(r) of ASOP No. 4 requires disclosure that future pension measurements may differ significantly from the current measurement. This section also requires the actuary to provide results of the analysis of the potential range of future measurements if the scope of the actuary's assignment included such analysis, or a statement indicating that because of the limited scope of the assignment, such an analysis was not performed.

Section 3.4.1 of ASOP No. 41, *Actuarial Communications*, indicates that "the actuary should consider what cautions regarding uncertainty or risk in any results should be included in the actuarial report." Section 3.3.2 of ASOP No. 4 says, "In conjunction with the related guidance in ASOP No. 41, the actuary should consider the uncertainty or risk inherent in the measurement assumptions and methods and how the actuary's measurement treats such uncertainty or risk."

The Pension Committee believes that the additional guidance in this new standard expands on section 3.4.1 of ASOP No. 41 and sections 3.3.2, 3.16, 4.1(r) of ASOP No. 4. Additionally, the Pension Committee believes that the additional disclosures required by this standard will help the intended users of the actuarial findings gain a better understanding of risks inherent in the measurements of pension obligations and actuarially determined pension plan contributions.

First Exposure Draft

In December 2014, the ASB approved a first exposure draft with a comment deadline of May 29, 2015. Fourteen comment letters were received and considered in making changes that were reflected in the second exposure draft.

ASOP No. 51—September 2017

In July 2014, the ASB issued a Request for Comments on ASOPs and Public Pension Plan Funding and Accounting. After comments were received, the ASB appointed a Pension Task Force to review this and other input and to develop recommendations for consideration by the ASB. In July 2015, the ASB held a public hearing on public plan issues that had arisen during this process. In its announcement of the public hearing, the ASB specifically requested that comments related to the first exposure draft on the assessment and disclosure of risk be submitted in writing prior to the comment deadline. As such, the aforementioned fourteen comment letters constituted the comments considered by the Pension Committee.

Second Exposure Draft

The second exposure draft of this ASOP was issued in June 2016 with a comment deadline of October 31, 2016. The Pension Committee carefully considered the seventeen comment letters received. For a summary of issues contained in these comment letters, please see the appendix. Key changes made to the final standard in response to comment letters received on the second exposure draft include the following:

1. In section 2 of this standard, various definitions were copied from ASOP Nos. 4 and 41 for such terms that were used in this standard.
2. Contribution Risk was made a defined term and the definition was expanded.
3. The definition of a Funding Valuation in section 2.7 was clarified.
4. The guidance in section 3.2, Identification of Risks to be Assessed, was clarified to indicate that the actuary is not required “to evaluate the ability or willingness of the plan sponsor or other contributing entity to make contributions to the plan when due,” and is not required “to assess the likelihood or consequences of potential future changes in applicable law.”
5. Guidance was added in section 3.3, Assessment of Risk, to address a funding valuation or pricing valuation that includes multiple measurements.
6. The language in section 3.6, Additional Assessment of Risk, was modified, replacing “beneficial” with “significantly beneficial.”
7. The guidance in section 3.9, Reliance on a Separate Report, was clarified.
8. The disclosure requirements regarding the risks identified and the results of the risk assessment were clarified.
9. Section 4.1(f) was added, requiring the actuary to disclose “any limitations or constraints on the comprehensiveness of the risk assessment.”

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The Pension Committee thanks former committee chairperson Mita D. Drazilov and former committee members Fiona E. Liston, Mitchell I. Serota, Judy K. Stromback, and Virginia C. Wentz for their assistance with drafting this ASOP.

The ASB voted in September 2017 to adopt this standard.

ASOP No. 51—September 2017

Pension Committee of the ASB

Christopher F. Noble, Chairperson

Margaret S. Berger	David T. Kausch
Lawrence Deutsch	Stephen T. McElhaney
Tammy F. Dixon	Alan W. Milligan
Howard A. Freidin	

Actuarial Standards Board

Maryellen J. Coggins, Chairperson

Christopher S. Carlson	Kathleen A. Riley
Beth E. Fitzgerald	Barbara L. Snyder
Darrell D. Knapp	Frank Todisco
Cande J. Olsen	Ross A. Winkelman

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ASOP No. 51—September 2017

ACTUARIAL STANDARD OF PRACTICE NO. 51

**ASSESSMENT AND DISCLOSURE OF RISK
ASSOCIATED WITH MEASURING PENSION OBLIGATIONS
AND DETERMINING PENSION PLAN CONTRIBUTIONS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing certain actuarial services with respect to measuring obligations under a defined benefit pension plan (hereafter referred to as “plan” or “pension plan”) and calculating **actuarially determined contributions** for such plans, with regard to the assessment and disclosure of the **risk** that actual future measurements may differ significantly from expected future measurements. Examples of future measurements include pension obligations, **actuarially determined contributions**, and **funded status**.

This standard supplements the guidance in actuarial standards of practice No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*; ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*; ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*; and ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations* addressing measuring pension obligations, calculating plan costs or contributions, selecting actuarial assumptions for measuring pension obligations, and selecting and using asset valuation methods for pension valuations.

1.2 **Scope**—This standard applies to actuaries when performing a **funding valuation** of a pension plan. This standard also applies to actuaries when performing a **pricing valuation** of a proposed pension plan change that would, in the actuary’s professional judgment, significantly change the types or levels of **risks** of the pension plan. This standard also applies to actuaries when performing a **risk** assessment that is not part of a **funding valuation** or **pricing valuation**.

This standard does not apply to actuaries performing services in connection with applications for plan partitions or benefit suspensions under the Multiemployer Pension Relief Act of 2014. This standard also does not apply to actuaries performing services in connection with other post-employment benefits, such as medical benefits. In addition, this standard does not apply to actuaries performing **funding valuations** or **pricing valuations** for social insurance programs as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless an ASOP on social insurance explicitly calls for application of this standard).

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In some circumstances, the actuary's assignment might include advising the plan sponsor on the management or reduction of **risk**. This standard does not provide guidance on such **risk management**.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial work product with a **measurement date** on or after November 1, 2018.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice. Certain terms embedded within these definitions, and not used elsewhere in this ASOP, are defined in ASOP No. 4.

- 2.1 **Actuarial Accrued Liability**—The portion of the **actuarial present value** of projected benefits (and expenses, if applicable), as determined under a particular actuarial cost method that is not provided for by future **normal costs**. Under certain actuarial cost methods, the **actuarial accrued liability** is dependent upon the actuarial value of assets.
- 2.2 **Actuarial Present Value**—The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions with regard to future events, observations of market or other valuation data, or a combination of assumptions and observations.
- 2.3 **Actuarially Determined Contribution**—A potential payment to the plan as determined by the actuary using a **contribution allocation procedure**. It may or may not be the amount actually paid by the plan sponsor or other contributing entity.
- 2.4 **Contribution Allocation Procedure**—A procedure that uses an actuarial cost method, and may include an asset valuation method, an amortization method, and an output smoothing method, to determine the **actuarially determined contribution** for a plan. The procedure may produce a single value, such as **normal cost** plus an amortization payment of the unfunded **actuarial accrued liability**, or a range of values, such as the range from the ERISA minimum required contribution to the maximum tax-deductible amount.

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- 2.5 **Contribution Risk**—The potential of actual future contributions deviating from expected future contributions, for example, that actual contributions are not made in accordance with the plan’s funding policy, that withdrawal liability assessments or other anticipated payments to the plan are not made, or that material changes occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base.
- 2.6 **Funded Status**—Any comparison of a particular measure of plan assets to a particular measure of plan obligations.
- 2.7 **Funding Valuation**—A measurement of pension obligations or projection of cash flows performed by the actuary intended to be used by the **principal** to determine plan contributions or to evaluate the adequacy of specified contribution levels to support benefit provisions.
- 2.8 **Intended User**—Any person the actuary identifies as able to rely on the actuarial findings.
- 2.9 **Measurement Date**—The date as of which the values of the pension obligations and, if applicable, assets are determined.
- 2.10 **Normal Cost**—The portion of the **actuarial present value** of projected benefits (and expenses, if applicable) that is allocated to a period, typically twelve months, under the actuarial cost method. Under certain actuarial cost methods, the **normal cost** is dependent upon the actuarial value of assets.
- 2.11 **Participant**—An individual who satisfies the requirements for participation in the plan.
- 2.12 **Prescribed Assumption or Method Set by Another Party**—A specific assumption or method that is selected by another party, to the extent that law, regulation, or accounting standards gives the other party responsibility for selecting such an assumption or method. For this purpose, an assumption or method set by a governmental entity for a plan that such governmental entity or a political subdivision of that entity directly or indirectly sponsors is deemed to be a **prescribed assumption or method set by another party**.
- 2.13 **Pricing Valuation**—A measurement of pension obligations or projection of cash flows performed by the actuary to estimate the impact of proposed changes to plan benefit provisions on the plan contributions or to determine whether the proposed benefit provisions are supportable by specified contribution levels.
- 2.14 **Principal**—A client or employer of the actuary.
- 2.15 **Risk**—The potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience. For purposes of this ASOP, **risk** includes **contribution risk**.
- 2.16 **Scenario Test**—A process for assessing the impact of one possible event, or several

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simultaneously or sequentially occurring possible events, on a plan’s financial condition.

- 2.17 **Sensitivity Test**—A process for assessing the impact of a change in an actuarial assumption on an actuarial measurement.
- 2.18 **Stochastic Modeling**—A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes.
- 2.19 **Stress Test**—A process for assessing the impact of adverse changes in one or relatively few factors affecting a plan’s financial condition.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Overview**—Measuring pension obligations and calculating **actuarially determined contributions** requires the use of assumptions regarding future economic and demographic experience. However, an **intended user** of such measurement may not understand the effects of future experience differing from the assumptions used in the **funding valuation** or **pricing valuation**, or the potential volatility of future measurements resulting from such differences.

Guidance regarding methods and assumptions for measuring and determining pension costs, contributions, obligations, and **funded status** is provided in ASOP Nos. 4, 27, 35, and 44. In the event of a conflict between the guidance provided in this ASOP and the ASOPs listed above, this ASOP would govern.

- 3.2 **Identification of Risks to be Assessed**—The actuary should identify **risks** that, in the actuary’s professional judgment, may reasonably be anticipated to significantly affect the plan’s future financial condition. Examples of **risks** include the following:
 - a. investment **risk** (i.e., the potential that investment returns will be different than expected);
 - b. asset/liability mismatch **risk** (i.e., the potential that changes in asset values are not matched by changes in the value of liabilities);
 - c. interest rate **risk** (i.e., the potential that interest rates will be different than expected);
 - d. longevity and other demographic **risks** (i.e., the potential that mortality or other demographic experience will be different than expected); and
 - e. **contribution risk.**

This standard does not require the actuary to evaluate the ability or willingness of the plan sponsor or other contributing entity to make contributions to the plan when due. This standard does not require the actuary to assess the likelihood or consequences of potential future changes in applicable law. In addition, the actuary is not expected to provide investment advice.

- 3.3 **Assessment of Risk**—The actuary should assess the **risk**s identified by the actuary in accordance with section 3.2, including the potential effects of the identified **risk**s on the plan’s future financial condition. The assessment should take into account circumstances specific to the plan (for example, funding policy, investment policy, **funded status**, or plan demographics). This standard does not require the assessment to be based on numerical calculations.

A **funding valuation** or **pricing valuation** as of a particular **measurement date** may include multiple measurements that may be prepared at the same time or at different times. The actuary may perform a single **risk** assessment for such **funding valuation** or **pricing valuation** if, in the actuary’s professional judgment, that **risk** assessment is appropriate for all measurements in the **funding valuation** or **pricing valuation**.

- 3.4 **Methods for Assessment of Risk**—If the nature of the actuary’s assessment of **risk** requires the selection of methods, the actuary should use professional judgment in selecting these methods. Methods may include, but are not limited to **scenario tests**, **sensitivity tests**, **stochastic modeling**, **stress tests**, and a comparison of an **actuarial present value** using a discount rate derived from minimal-risk investments to a corresponding **actuarial present value** from the **funding valuation** or **pricing valuation**.

The actuary should take into account the degree to which the methods and models reflect the nature, scale, and complexity of the plan. In using professional judgment, the actuary may take into account practical considerations such as usefulness, reliability, timeliness, and cost efficiency.

- 3.5 **Assumptions for Assessment of Risk**—If the nature of the actuary’s assessment of **risk** requires the selection of assumptions, the actuary should use professional judgment in selecting these assumptions. One or more assumptions selected for the assessment of **risk** should differ from the assumptions used to determine expected future measurements and should result in one or more plausible outcomes.

The assumptions used for assessment of **risk** may be based on economic and demographic data and analyses. This information is available from a variety of sources, including representatives of the plan sponsor and administrator, investment advisors, demographers, economists, and other professionals. Views of experts or **principals** may be considered but the selection of assumptions for the assessment of **risk** should reflect the actuary’s professional judgment.

3.6 **Additional Assessment of Risk**—If, in the actuary’s professional judgment, a more detailed assessment would be significantly beneficial for the **intended user** to understand the **risks** identified by the actuary, the actuary should recommend to the **intended user** that such an assessment be performed. In making this judgment, the actuary should take into consideration factors including, but not limited to, the following:

- a. findings of the **risk** assessment that the actuary has performed;
- b. the size of the plan;
- c. the size of the plan relative to the size of the plan sponsor;
- d. the maturity of the plan;
- e. the **funded status** of the plan;
- f. the plan’s asset allocation;
- g. any relevant characteristics of the **contribution allocation procedure** or other method for determining contributions, such as a significantly backloaded **contribution allocation procedure**;
- h. to the extent known by the actuary, indications that the plan sponsor or other contributing entity may not make current or future recommended contributions to the plan, whether based on recent history, new developments, external analyses, or other known factors;
- i. the length of time since the last such assessment; and
- j. any significant changes in circumstances since the last such assessment.

3.7 **Plan Maturity Measures**—In addition to the requirements of section 3.3, the actuary should calculate and disclose plan maturity measures that, in the actuary’s professional judgment, are significant to understanding the **risks** associated with the plan. Examples include the following:

- a. the ratio of market value of assets to active **participant** payroll;
- b. the ratio of retired life **actuarial accrued liability** to total **actuarial accrued liability**;
- c. the ratio of a cash flow measure (such as benefit payments, or contributions less benefit payments) to market value of assets;
- d. the ratio of benefit payments to contributions; and

- e. the duration of the **actuarial accrued liability**.

The actuary also should provide commentary to help the **intended user** understand the significance of the disclosed plan maturity measures when assessing **risk**.

Since various plan maturity measures may convey similar information about **risk**, the actuary should use professional judgment in selecting the plan maturity measures, if any, to calculate and disclose.

- 3.8 **Historical Information**—If historical values of the plan’s actuarial measurements are reasonably available, the actuary should identify and disclose relevant historical values of the plan’s actuarial measurements that, in the actuary’s professional judgment, are significant to understanding the **risks** identified in accordance with section 3.2. Examples of such actuarial measurements include the following, expressed as dollar amounts, percentages, or in some other form, as appropriate:
- a. plan maturity measures;
 - b. **funded status**;
 - c. **actuarially determined contribution**;
 - d. actuarial gains and losses (investment and non-investment);
 - e. **normal cost**; and
 - f. plan settlement liability.

Since various plan historical actuarial measurements may convey similar information about **risk**, the actuary should use professional judgment in selecting the historical actuarial measurements and historical period to disclose.

If other historical information relevant to the actuarial measurements is reasonably available, the actuary should consider identifying and disclosing such historical information that the actuary believes is significant to understanding the **risks** associated with the plan. Examples include a comparison of actual contributions to **actuarially determined contributions**, plan **participant** count, and covered payroll.

The actuary also should provide commentary to help the **intended user** understand the significance of the disclosed historical actuarial measurements and the disclosed other historical information when assessing **risk**.

- 3.9 **Reliance on a Separate Report**—One or more **risks** identified by the actuary in accordance with section 3.2 may have been assessed by another party (for example, by

another actuary or by an investment advisor). In these situations, the actuary may rely on the assessment of **risk** prepared by another party to partly or fully satisfy the requirements of this standard if, in the actuary's professional judgment, such assessment is consistent with applicable requirements of this standard.

Section 4. Communications and Disclosures

4.1 **Disclosures**—Any actuarial communication prepared to communicate the results of work subject to this standard should comply with the requirements of ASOP Nos. 4; 23, *Data Quality*; 27; 35; 41, *Actuarial Communications*; and 44. In addition, such communication should contain the following disclosures when relevant and material:

- a. the **risks** identified in accordance with section 3.2 and the results of the **risk** assessment performed in accordance with section 3.3, including plan-specific commentary on the potential effects of the identified **risks** on the plan's future financial condition and the specific circumstances applicable to the plan that were taken into account;
- b. if applicable, a description of each significant method or assumption upon which the actuary's **risk** assessment depends, in accordance with sections 3.4 and 3.5;
- c. if applicable, a recommendation to the **intended user** that a more detailed assessment be performed, in accordance with section 3.6;
- d. the values of any plan maturity measures selected in accordance with section 3.7, including related commentary to help the **intended user** understand the significance of the plan maturity measures when assessing **risk**. Examples of these plan maturity measures and related commentary include the following:
 - i. if the actuary discloses the ratio of market value of assets to active **participant** payroll, the actuary could describe the significance of this ratio with respect to contribution volatility;
 - ii. if the actuary discloses the ratio of retired life **actuarial accrued liability** to total **actuarial accrued liability**, the actuary could describe the significance of this ratio with respect to the plan's asset/liability mismatch;
 - iii. if the actuary discloses the ratio of a cash flow measure to market value of assets, the actuary could describe how negative cash flow may amplify investment **risk**;
 - iv. if the actuary discloses the ratio of benefit payments to contributions, where contribution rates are fixed, the actuary could describe the

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dependence upon stable investment returns to continue to provide benefits; and

- v. if the actuary discloses the duration of the **actuarial accrued liability**, the actuary could describe the sensitivity of the liability to changes in interest rates.
- e. the historical values of any actuarial measurements and any other historical information relevant to the actuarial measurements selected in accordance with section 3.8, including related commentary to help the **intended user** understand the significance of this information when assessing **risk**; and
- f. any limitations or constraints on the comprehensiveness of the **risk** assessment.

An actuarial communication can comply with some or all of the specific requirements of this section by making reference to a separate report that the actuary has relied on (in accordance with section 3.9) or to information contained in another actuarial communication. As discussed in ASOP No. 41, any referenced actuarial communication or separate report should be available to the **intended users**.

- 4.2 **Disclosure about Prescribed Assumptions or Methods**—The actuary’s communication should state the source of any prescribed assumptions or methods used in the assessment of **risk**.

With respect to **prescribed assumptions or methods set by another party**, the actuary’s communication should identify the following, if applicable:

- a. any **prescribed assumption or method set by another party** that significantly conflicts with what, in the actuary’s professional judgment, would be reasonable for the purpose of the measurement; or
- b. any **prescribed assumption or method set by another party** that the actuary is unable to evaluate for reasonableness for the purpose of the measurement.

- 4.3 **Additional Disclosures**—The actuary should also include the following, as applicable, in an actuarial communication:

- a. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method set by a party other than the actuary; and
- b. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

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- 4.4 **Confidential Information**—Nothing in this standard is intended to require the actuary to disclose confidential information.

Appendix

Comments on the Second Exposure Draft and Responses

The second exposure draft of the ASOP, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*, was issued in June 2016 with a comment deadline of October 31, 2016. Seventeen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Pension Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term “reviewers” in the appendix includes the Pension Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in the appendix refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	Two commentators stated that the standard requires work that is either not sufficiently useful or too difficult to be appropriate practice.
Response	The reviewers disagree and believe that the requirements of the standard strike an appropriate balance between practical considerations and detailed analyses. Therefore, the reviewers made no change in response to these comments.
Comment	Two commentators suggested that the standard should require more detailed and numerical assessment of risks.
Response	The reviewers disagree and believe that the standard strikes an appropriate balance between the costs and the benefits of the assessment and disclosure of risks. Therefore, the reviewers made no change in response to these comments.
Comment	Two commentators suggested that the requirements of the standard will result in boilerplate language that provides no benefit to intended users.
Response	The reviewers believe that the requirements of the standard will result in the provision of useful information and made no change in response to these comments.
Comment	One commentator suggested that the standard will increase the actuary’s potential exposure in litigation.
Response	The reviewers believe that the requirements of the standard are appropriate and made no change in response to this comment.

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Comment	Several commentators noted that the balance between practical considerations and detailed analyses in this standard is improved from the first exposure, that aspects of this standard strike an appropriate balance, or that portions of the standard provide useful guidance.
Response	The reviewers agree and left these aspects of the guidance substantively unchanged.
Comment	One commentator suggested that the standard acknowledge how risk varies for smaller plans.
Response	The reviewers acknowledge that risks may vary depending on multiple factors including plan size, but believe that the standard provides appropriate guidance for practice relating to all sizes of pension plans and made no changes in response to this comment.
Comment	One commentator suggested that the scope of the standard should include actuarial valuations prepared exclusively for financial reporting.
Response	The reviewers believe that the limitation of the scope to funding valuations and pricing valuations strikes an appropriate balance between the costs and the benefits of the assessment and disclosure of risks. The reviewers note that accounting valuations were included in the scope in the first exposure draft and were removed in response to comments.
Comment	Two commentators requested that the definition of “intended user” be expanded for the purpose of this standard.
Response	The reviewers believe that the meaning of “intended user” in ASOP No. 41, <i>Actuarial Communications</i> , is appropriate for this standard and incorporated that definition into this standard.
Comment	One commentator requested examples of assessment and disclosure of risk.
Response	The reviewers believe that codification of examples of compliance is beyond the intended purpose of this standard and made no change in response to this comment.
Comment	One commentator suggested development of a similar standard for OPEB plans.
Response	The reviewers note that future standards may address the assessment of risk for OPEB plans.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested adding language clarifying whether the ASOP applies to public plans, private plans, or both, and suggested adding a definitive statement that the ASOP does not apply to OPEB valuations.
Response	The reviewers note that the ASOP applies to “defined benefit pension plans,” and that section 1.2 states that the standard “does not apply to actuaries performing services in connection with other post-employment benefits such as medical benefits.” Accordingly, the reviewers made no changes in response to this comment.
Section 1.2, Scope	
Comment	Several commentators requested clarification that the ASOP does not apply to valuations for the purposes of accounting for the plan under the appropriate accounting standards.
Response	The reviewers agree and deleted the reference to “periodic cost” in the definition of pricing valuation.

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Comment	One commentator suggested that an evaluation of the ability of the plan sponsor or other contributing entity to make contributions to the plan when due is a credit risk, and the actuary should receive a reliance letter stating that the party responsible for making contributions agrees with the contribution assumptions included in the funding or pricing valuation.
Response	The reviewers disagree and made no change.
Comment	One commentator suggested changing the guidance from “This standard does not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make contributions to the plan when due” to “This standard does not require the actuary to evaluate the ability or willingness of the plan sponsor or other contributing entity to make contributions to the plan when due.”
Response	The reviewers agree and made the change in section 3.2 of this standard, Identification of Risks to be Assessed.
Comment	One commentator noted that the standard excludes services in connection with benefit suspension applications under the Multiemployer Pension Relief Act of 2014 (MPRA), and suggested that the consulting work prior to the preparation of such an application would greatly benefit from risk assessments and disclosures. The commentator went on to suggest that if the rationale for the exclusion is that the format of the application itself is prescribed, then it would be appropriate to exclude all funding valuations and pricing valuation where the format is prescribed by law.
Response	The reviewers note that the benefit suspension submission under MPRA already requires a risk assessment and made no change to the ASOP.
Comment	Two commentators suggested that the purpose and scope of the ASOP should make it clear that a risk assessment is not required when an actuary communicates results that are solely intended to satisfy a government filing requirement.
Response	The reviewers agree and clarified the definition of a funding valuation in section 2.1, Funding Valuation (now section 2.7).
Comment	One commentator suggested alternative language to resolve any ambiguity regarding the required risk assessments and prevent unnecessary repetition of disclosures and analyses when a valuation consists of multiple calculations and certifications that occur during a year.
Response	In response to this comment, the reviewers modified section 3.3 of this standard, Assessment of Risk, by adding “A funding valuation or pricing valuation as of a particular measurement date may include multiple measurements that may be prepared at the same time or at different times. The actuary may perform a single risk assessment for such funding valuation or pricing valuation if, in the actuary’s professional judgment, that risk assessment is appropriate for all measurements in the funding valuation or pricing valuation.”
Comment	One commentator requested an explicit statement in section 1.2, Scope that excludes withdrawal liability valuations from the scope of the standard so as to remove any ambiguity on this issue.
Response	The reviewers disagree that withdrawal liability measurements should be explicitly excluded from the scope of the ASOP and did not make a change in response to this comment. However, the reviewers modified language in section 3.3, Assessment of Risk, to read “A funding valuation or pricing valuation as of a particular measurement date may include multiple measurements that may be prepared at the same time or at different times. The actuary may perform a single risk assessment for such funding valuation or pricing valuation if, in the actuary’s professional judgment, that risk assessment is appropriate for all measurements in the funding valuation or pricing valuation.”

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SECTION 2. DEFINITIONS	
Comment	Two commentators suggested that for terms used in this standard that are defined in ASOP No. 4, <i>Measuring Pension Obligations and Determining Pension Plan Costs or Contributions</i> , the definitions from ASOP No. 4 be incorporated in this standard.
Response	The reviewers agree and included additional definitions in the standard.
Section 2.1, Funding Valuation (now section 2.7)	
Comment	One commentator suggested that if multiple funding valuations are delivered to the plan sponsor as part of the same report, an actuary should generally not be required to perform risk assessments on each funding valuation and any required risk assessment should be performed on the funding valuation that the plan sponsor relies on the most to determine the employer contribution.
Response	The reviewers agree and modified section 3.3, Assessment of Risk, to read “A funding valuation or pricing valuation as of a particular measurement date may include multiple measurements that may be prepared at the same time or at different times. The actuary may perform a single risk assessment for such funding valuation or pricing valuation if, in the actuary’s professional judgment, that risk assessment is appropriate for all measurements in the funding valuation or pricing valuation.”
Comment	Two commentators suggested that the definition should make it clear that the scope of the ASOP includes a report that is a periodic review of a fixed-rate contribution level (e.g., where the contribution is fixed by law and the effective amortization period is calculated).
Response	The reviewers agree and modified the definition to include evaluation of “the adequacy of specified contribution levels to support benefit provisions.”
Comment	Several commentators suggested clarifying the definition of funding valuation to include cash flow projections used to determine contributions or the solvency of the plan.
Response	The reviewers agree and modified the definition.
Comment	Several commentators suggested that the reference to determination of minimum required contributions under ERISA should be clarified or deleted to avoid limiting the scope to such valuations.
Response	The reviewers agree that the reference to ERISA did not improve the guidance and deleted that reference.
Section 2.2, Pricing Valuation (now section 2.13)	
Comment	Several commentators requested clarification on whether the ASOP applies to valuations for the purposes of accounting for the plan under the appropriate accounting standards, noting that the definition included the term “periodic cost.”
Response	The reviewers clarified the language by deleting the reference to “periodic cost.”
Comment	One commentator suggested a clarification that cash flow projections may be considered a pricing valuation.
Response	The reviewers agree and modified the definition.
Section 2.3, Risk (now section 2.15)	
Comment	One commentator made extensive suggestions regarding the definition of risk, proposing multiple specific types of risk.
Response	The reviewers believe that the current structure is appropriate and did not incorporate the proposed changes. The reviewers note that a separate definition of contribution risk is now included in the ASOP.

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Comment	One commentator suggested that the definition of risk should include the risk that contribution increases may be large and difficult for the plan sponsor and that a plan sponsor's contribution behavior may be different than expectations.
Response	The reviewers believe that the definition of contribution risk is sufficiently broad, and made no change in response to this comment.
Section 2.6, Stochastic Modeling (now section 2.18)	
Comment	One commentator suggested replacing “estimating distributions” with “assessing the range and probabilities” to make the section parallel to the definitions of scenario test, sensitivity test, and stress test.
Response	The reviewers considered the language in this section in response to this comment but did not believe it needed to be made parallel. However, the reviewers modified the definition to read “A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes.”
Section 2.7, Stress Test (now section 2.19)	
Comment	Several commentators suggested replacing “measuring” with “assessing” to make the section consistent with the definitions of scenario test, sensitivity test, and stochastic modeling.
Response	The reviews agree and made the change.
Comment	Two commentators noted that the definition in the exposure draft is the only one that focuses only on adverse changes instead of both favorable and unfavorable outcomes. One of these commentators suggested changing “adverse” to “significant” accordingly.
Response	The reviewers agree that stress test is the only method discussed in the standard that focuses on adverse outcomes, but believe the definition is appropriate, and made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.2, Assessment of Risk (now section 3.3)	
Comment	One commentator suggested that this section should include additional commentary regarding quantitative versus qualitative assessments.
Response	The reviewers note that the ASOP does not require the assessment to be based on numerical calculations, leaves the methods for assessing risk to the actuary’s professional judgment, and makes no distinction between qualitative and quantitative assessments. Such distinctions were removed in response to comments on the first exposure draft. Therefore, the reviewers made no change in response to this comment.
Comment	One commentator suggested that risks should be prioritized as to their impact on the balance sheet.
Response	The reviewers believe that the guidance is appropriate, and made no change.
Comment	One commentator suggested that the requirement that the “assessment should take into account circumstances applicable to the plan” required consideration of each of the circumstances that followed in the parenthetical list.
Response	The reviewers note that the parenthetical list contains examples, not requirements, and made no change.

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Comment	Two commentators suggested that the order of section 3.2 and 3.3 be reversed so that the actuary is directed to identify the risks before being directed to assess them. One commentator also suggested that the first sentence be revised to require the actuary to assess the risks (rather than “include an assessment”) so that this section is not a disclosure requirement.
Response	The reviewers agree and made the changes.
Section 3.3, Identification of Risks to be Assessed (now section 3.2)	
Comment	One commentator suggested removing from the definition of contribution risk the potential that the funding policy is not consistent with an actuarially determined contribution and noted that ASOP No. 4 already requires the actuary to qualitatively assess the implications of the funding policy.
Response	The reviewers agree that the ASOP No. 4 requirement is sufficient, and removed the phrase from the definition of contribution risk.
Comment	Several commentators suggested that contribution risk be separately defined in section 2, and that the definition of risk in section 2.3 (now section 2.15) should be expanded to explicitly cover contribution risk.
Response	The reviewers agree with the suggestions, and made the changes.
Comment	One commentator suggested that the definition of risk should be expanded to include unpaid withdrawal liability.
Response	The reviewers agree and included withdrawal liability assessments in new section 2.5, Contribution Risk.
Comment	One commentator suggested that the definition of risk should be clarified to indicate whether or not model risk is included, given that there is an exposure draft on modeling and the possibility that the two standards could conflict.
Response	The reviewers believe that the actuary should use professional judgment in selecting the risks to be assessed and made no change in response to this comment. The reviewers note that the proposed Modeling ASOP (if adopted by the ASB) may provide additional guidance concerning assessment and disclosure of model risk.
Comment	Several commentators suggested that the language “this standard does not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make contributions to the plan when due” be revised so that the actuary is not required to assess “the ability or willingness” to make a contribution when due or the “likelihood that contributions will be made.”
Response	The reviewers agree and modified the language accordingly.
Comment	One commentator suggested that the list of examples in this section be moved outside the body of the standard or deleted entirely to avoid limiting actuaries’ considerations to the risks included in the list.
Response	The reviewers believe that the inclusion of examples in the standard is appropriate and clarified the language.
Comment	One commentator suggested replacing contribution risk with legislative risk in the list of examples.
Response	The reviewers disagree. In addition, the reviewers modified the language in new section 3.2, Identification of Risks to be Assessed, to include the following: “This standard does not require the actuary to assess the likelihood or consequences of potential future changes in applicable law.”

ASOP No. 51—September 2017

Comment	One commentator noted that another ASOP already requires the actuary to disclose if the contribution allocation procedure is inconsistent with accumulating sufficient assets to make benefit payments when due and requested clarification about the distinction between that requirement and the assessment of contribution risk.
Response	As the commentator notes, ASOP No. 4 requires the actuary to disclose if the “contribution allocation procedure is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due.” Section 2.5, Contribution Risk, of this ASOP, defines contribution risk to include the potential “that actual contributions are not made in accordance with the plan’s funding policy.” The reviewers believe the distinction between the two is clear and made no change in response to this comment.
Comment	One commentator suggested that the only way to determine whether risks are material is to perform a robust stochastic analysis.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested that the ASOP specify that each assumption used in the valuation should be reviewed to determine whether variance in that assumption could affect the plan’s funded status in an important way. The commentator also proposed adding a list of factors the actuary might consider in determining the relevance of a risk.
Response	The reviewers believe the use of professional judgment in identifying significant risks is appropriate, and made no change in response to this comment.
Comment	One commentator noted that ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , indicates “significance can have different meanings” and suggested that “significance” should be clarified to emphasize relevance instead of size.
Response	The reviewers believe that the identification of risks that “may reasonably be anticipated to significantly affect the plan’s future financial condition” should be based on the actuary’s professional judgment, and made no change.
Comment	One commentator suggested that it may be appropriate for the actuary to specifically identify assumptions the actuary believes to be insignificant.
Response	The reviewers believe the guidance requiring actuaries to identify significant risks is appropriate and made no change.
Comment	One commentator suggested that the last sentence in the first paragraph be clarified to indicate that the listed risks are only examples.
Response	The reviewers agree and revised the language.
Comment	Several commentators suggested adding demographic risk to the list of examples.
Response	The reviewers agree and made the change.
Comment	One commentator suggested that it would be appropriate to disclose that multiple individual risks may combine to produce an extreme result or that leveraging might result in a small change in one measurement leading to a large change in contributions or other measurements.
Response	The reviewers note that nothing in the standard precludes the actuary from identifying the impact of risks in combination. In regards to leveraging, the reviewers note that section 3.2 reads “The actuary should identify risks that, in the actuary’s professional judgment, may reasonably be anticipated to significantly affect the plan’s future financial condition.” The reviewers added section 4.1(f), which states that the actuary disclose “any limitations or constraints on the comprehensiveness of the risk assessment.”

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Section 3.4, Assumptions for Assessment of Risk (now section 3.5)	
Comment	One commentator suggested that empirical data be used to select assumptions rather than using professional judgment.
Response	The reviewers note that the section Assumptions for Assessment of Risk reads “The assumptions used for assessment of risk may be based on economic and demographic data and analyses,” but believe “the actuary should use professional judgment in selecting [these] assumptions” and made no change in response to this comment.
Comment	Two commentators suggested the term “plausible” is not clear and also that implausible outcomes should be considered.
Response	The reviewers believe the term “plausible,” combined with the requirement for the actuary to use professional judgment, is appropriate for this standard and made no change in response to this comment.
Comment	Two commentators suggested the order of sections 3.4 and 3.5 be reversed.
Response	The reviewers agree and made the change.
Comment	One commentator suggested removing the sentence “The actuary may benefit from becoming familiar with a range of views on the factors underlying each assumption.”
Response	The reviewers agree and made the change.
Section 3.6, Additional Assessment of Risk	
Comment	Several commentators agreed with the proposed guidance on additional assessment of risk.
Response	The reviewers left section 3.6 substantially the same as in the second exposure draft but made edits to reflect specific suggestions from other commentators, as described in the remainder of these responses.
Comment	One commentator opposed the requirements of this section and believed that the recommendations for additional assessments will have little effect on whether more detailed risk assessments are performed.
Response	The reviewers disagree and made no change in response to this comment.
Comment	One commentator suggested the term “intended user” should not extend beyond the plan sponsor.
Response	The reviewers clarified the term by adding the definition of “intended user” from ASOP No. 41.
Comment	Several commentators suggested softening the requirement to state that the actuary should recommend “consideration” of a more detailed assessment instead of recommending the assessment.
Response	The reviewers believe the current language is appropriate and made no change.
Comment	Several commentators suggested changing “beneficial” to something that would reduce the frequency of such recommendations.
Response	The reviewers changed “beneficial” to “significantly beneficial” in response to these comments.

ASOP No. 51—September 2017

Comment	One commentator suggested that the absolute “size of the plan” is not an appropriate factor to consider, one commentator suggested that “size of the plan” should be replaced with “size of the plan relative to the plan sponsor,” and a third commentator requested clarification of how size should be determined.
Response	The reviewers believe that plan size is an appropriate factor for the actuary to consider in determining whether a more detailed assessment would be significantly beneficial to the intended user and that the measurement of plan size should be left to the professional judgment of the actuary. Therefore, the reviewers did not alter or remove plan size from the factors to be given consideration. The reviewers added “size of the plan relative to the size of the plan sponsor” to the list of considerations.
Comment	One commentator suggested expanding the reference to contribution allocation procedure to include “any other method for determining actual contributions, such as a significantly backloaded contribution allocation procedure.”
Response	The reviewers agree and modified the language.
Section 3.7, Plan Maturity Measures	
Comment	Several commentators suggested prioritizing certain plan maturity measures, providing flexibility regarding the selection of plan maturity measures to be disclosed, or additions to, deletions from, or reordering of the list of examples.
Response	The reviewers note that the listed measures are labeled “examples,” clarified some, and modified the language in the standard to “Since various plan maturity measures may convey similar information about risk, the actuary should use professional judgment in selecting the plan maturity measures, if any, to calculate and disclose.” The reviewers believe this language provides appropriate flexibility.
Comment	One commentator suggested “plan maturity” be defined.
Response	The reviewers believe the examples provide sufficient guidance and made no change.
Comment	One commentator suggested “payroll” be clarified.
Response	The reviewers agree and clarified the example.
Comment	One commentator suggested “net cash flow” be clarified.
Response	The reviewers agree, changed “net cash flow” to “a cash flow measure,” and provided examples.
Comment	One commentator asked if plan maturity measures can be provided orally and whether commentary is required if the actuary believes that no plan maturity measures are relevant to understanding the risks in the plan.
Response	The reviewers believe that ASOP No. 41 provides sufficient guidance on oral communications. The reviewers added “if any” to encompass the possibility that no plan maturity measures are relevant to understanding the risks associated with the plan.
Comment	One commentator believed that the requirement to disclose plan maturity measures provides a reasonable balance between highlighting the inherent variability of actuarial measurements and imposing unnecessary costs on plan sponsors and risks on the actuary.
Response	The reviewers agree and retained the requirement.

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Section 3.8, Historical Information	
Comment	Several commentators indicated that disclosure of the historical information in section 3.8 is appropriate to assist intended users in understanding the risks associated with the plan. One commentator indicated that the requirement to disclose historical information provides a reasonable balance between highlighting the inherent variability of actuarial measurements and imposing unnecessary costs on plan sponsors and risks on the actuary.
Response	The reviewers agree and retained the requirement.
Comment	One commentator suggested that there should be commentary relating to the investment returns of the assets supporting the plan.
Response	The reviewers agree that investment returns may be relevant historical information and added the parenthetical phrase “(investment and non-investment)” following “actuarial gains and losses” in the list of examples.
Comment	One commentator disagreed that professional judgment should be used to select which historical measures to disclose.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Several commentators suggested that maturity measures should be included among the examples of historical information that might be disclosed.
Response	The reviewers agree and added maturity measures to the examples.
Comment	One commentator felt that the disclosure of historical values should only be required if such disclosure was significant to understanding material risks associated with the plan.
Response	In response to this comment, the reviewers clarified the language to refer to historical values that, “in the actuary’s professional judgment, are significant to understanding the risks identified in accordance with section 3.2 [Identification of Risks to be Assessed],” which refers to “risks that, in the actuary’s professional judgment, may reasonably be anticipated to significantly affect the plan’s future financial condition.”
Comment	One commentator believed that the term “normal cost” should be expanded to include service cost and target normal cost.
Response	The reviewers note that the list in this section is of examples and that other examples not included may also be appropriate. Therefore, the reviewers made no change in response to this comment.
Comment	One commentator believed that a requirement to include commentary about the significance of the disclosed information may lead to burdensome research and voluminous commentary, and the actuary should only be required to consider providing such commentary.
Response	The reviewers disagree and made no change in response to this comment.
Comment	Two commentators requested guidance on determining the length of the historical period to be disclosed. One of them suggested that professional judgment should be used.
Response	The reviewers agree and clarified the guidance to indicate that the actuary should use professional judgment in selecting the historical period to disclose.
Comment	One commentator requested guidance on reliance on historical information that was not prepared by the actuary.
Response	The reviewers note that ASOP No. 41 provides guidance if the actuary relies on other sources and made no change in response to this comment.

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Comment	One commentator suggested that other historical information should be limited to quantitative and not behavioral information and should relate specifically to the plan.
Response	The reviewers believe the guidance is appropriate and made no change in response to this comment.
Section 3.9, Reliance on a Separate Report	
Comment	Two commentators asked for clarification that an actuary can also rely on a previous or separate report prepared by the actuary.
Response	The reviewers did not change section 3.9 in response to this request for clarification because section 3.9 addresses a separate report in which risks “may have been assessed by another party.” The reviewers believe the guidance in section 3.2, Actuarial Report, of ASOP No.41 is sufficiently clear. However, the reviewers clarified the language in section 4.1, Disclosures, by moving the reference to “information contained in another actuarial communication” to follow the reference to “a separate report that the actuary has relied on (in accordance with section 3.9).”
Comment	Several commentators stated that it was not clear what type of report would meet this requirement, how the actuary would determine what would be consistent with what the actuary would have produced for a given risk, and whether the actuary could rely on a separate report.
Response	In response to these comments, the reviewers revised the language in this section to read “One or more risks identified by the actuary in accordance with section 3.2 may have been assessed by another party (for example, by another actuary or by an investment advisor). In these situations, the actuary may rely on the assessment of risk prepared by another party to partly or fully satisfy the requirements of this standard if, in the actuary’s professional judgment, such assessment is consistent with applicable requirements of this standard.”
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Disclosures	
Comment	One commentator suggested that the disclosures required were unduly burdensome and appear to implicitly require quantification of risks.
Response	The reviewers note that the disclosures are required only when relevant and material, and that the standard does not require that the assessment be based on numerical calculations. Therefore, the reviewers made no change in response to this comment.
Comment	Several commentators believed that the requirement to provide a rationale for selecting each risk is not useful or that the requirement to disclose the actuary's view of the significance of each identified risk is unclear.
Response	The reviewers agree and removed the language referring to the rationale for selecting a risk and the actuary's view of the significance of each identified risk. The reviewers added a statement to section 4.1(a) that reads “including plan-specific commentary on the potential effects of the identified risks on the plan’s future financial condition and the specific circumstances applicable to the plan that were taken into account.”
Comment	One commentator suggested that an additional disclosure be added to make it clear that the actuary will not know in advance which assumptions will have the largest effect on future measurements and that the descriptions of risks are not intended to be exhaustive or precise.
Response	In response to this comment, the reviewers added a requirement that the actuary disclose “any limitations or constraints on the comprehensiveness of the risk assessment.”

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Comment	One commentator suggested that the examples of plan maturity measures in section 4.1(d) be deleted due to the cost of maintaining all of these measures.
Response	The reviewers note that the measures and related commentary are examples. The reviewers also note that section 3.7, Plan Maturity Measures reads “Since various plan maturity measures may convey similar information about risk, the actuary should use professional judgment in selecting the plan maturity measures, if any, to calculate and disclose.” Therefore, the reviewers retained examples.
Comment	One commentator suggested that the standard include commentary about who computed the maturity measures if they were provided by another party.
Response	The reviewers added language at the end of section 4.1, Disclosures, to clarify references to other reports or communications. The reviewers also note that ASOP No. 41 provides guidance when an actuary relies upon the work of another party.
Section 4.2, Deviation from Guidance in the Standard (now Disclosure about Prescribed Assumptions or Methods)	
Comment	Several commentators suggested that the distinction in ASOP No. 4 between “prescribed assumption or method set by law” and “prescribed assumption or method set by another party” should be carried over to this standard.
Response	The reviewers agree and made the suggested changes.
Comment	One commentator requested clarification of the treatment of prescribed assumptions and methods.
Response	The reviewers modified the language regarding prescribed assumptions or methods to be consistent with ASOP No. 4.



**Actuarial Standard
of Practice
No. 52**

**Principle-Based Reserves for Life Products
under the NAIC *Valuation Manual***

**Developed by the
Task Force on Principle-Based Reserves of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
September 2017**

(Doc. No. 189)

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September 2017

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Principle-Based Reserves for Life Products

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 52

This document is the final version of ASOP No. 52, *Principle-Based Reserves for Life Products under the NAIC Valuation Manual*.

Background

The forces that led to the consideration of principle-based approaches to reserving for life insurance are discussed in appendix 1 of this document. As changes to laws and regulations that would incorporate such approaches started to develop several years ago, the ASB decided to explore the need for a standard of practice and formed a task force to produce a discussion draft of the standard. That task force created a discussion draft containing actuarial guidance for carrying out a principle-based valuation that was consistent with “VM-20: Requirements for Principle-Based Reserves for Life Products” of the *Valuation Manual*. The discussion draft was reviewed by a large group of interested parties as the draft of VM-20 itself changed over time.

First Exposure Draft

In June 2013, the ASB approved a first exposure draft of this proposed standard, with a comment deadline of December 16, 2013. Seven comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

In June 2014, the ASB approved a second exposure draft, with a comment deadline of December 15, 2014. Eight comment letters were received and considered in making changes that were reflected in a “pending draft.”

Pending Draft

In June 2015, the ASB approved changes to the second exposure draft. However, since the draft involved compliance with a regulation that had not yet taken effect, the ASB issued a “pending draft,” to be updated when the *Standard Valuation Law* and the *Valuation Manual* describing the principle-based reserves for life products took effect. At that point, the standard would be considered for adoption or, possibly, modified and re-exposed. Comments were not requested on the pending draft.

Exposure Draft

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The *Valuation Manual* has been modified by numerous amendments since the pending draft was issued. In light of these amendments, a new task force was created to update the pending draft as needed. The task force found that many of the amendments were for clarification or were related to the new Commissioner’s Standard Ordinary (CSO) table. A number of amendments prescribed specific methodology, such as requirements related to post-level period profits for term insurance or to disallow aggregation of reserves across product lines. Certain amendments required the application of actuarial professional judgment. The task force found the pending draft ASOP to provide sufficient guidance for all but a few of those amendments and therefore made updates. The task force also made minor clarifications and provided additional guidance in a few sections of the exposure draft.

In March 2017, the ASB approved the exposure draft with a comment deadline of May 31, 2017. Fourteen comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2. In general, the revisions provided clarification of the intent of the standard and did not result in substantive change to the standard.

Because VM-20 is a new method for statutory valuation, the ASB expects numerous amendments to the *Valuation Manual* over the next few years. The following language has been included in section 1.2 of this ASOP to address this: “In the event of a conflict between the provisions of the *Valuation Manual* in effect at the time the actuarial services are provided and the provisions of the ASOP, the provisions of the *Valuation Manual* shall govern.”

The ASB wishes to thank everyone who took the time to contribute comments and suggestions to the exposure drafts, and in particular offers special thanks to the previous iteration of the Task Force on Principle-Based Reserves, who drafted this standard from concept through two exposure drafts and a “pending draft.” Chaired by Frank Irish, the task force comprised Jeremy Brown, Arnold A. Dicke, Jacqueline M. Keating, Larry H. Rubin, Allan W. Ryan, and Robert W. Stein.

The ASB voted in September 2017 to adopt this standard.

Task Force on Principle-Based Reserves

Linda M. Lankowski, Chairperson	
Erik A. Anderson	Jacqueline M. Keating
Arnold A. Dicke	Michael C. Ward

Life Committee of the ASB

David A. Brentlinger, Chairperson	
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Actuarial Standards Board

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE

**PRINCIPLE-BASED RESERVES FOR LIFE PRODUCTS
UNDER THE NAIC VALUATION MANUAL**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to developing or opining on **principle-based reserves** (PBR) for life insurance that are reported by companies in compliance with applicable law based upon the National Association of Insurance Commissioners (NAIC) *Standard Valuation Law* (referred to herein as the *Standard Valuation Law*) and the NAIC *Valuation Manual* (*Valuation Manual*) as adopted in December 2012 with subsequent amendments.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services on behalf of life insurance companies, including fraternal benefit societies, in connection with the calculation or review of reserves for life insurance policies subject to “VM-20: Requirements for Principle-Based Reserves for Life Products” in the *Valuation Manual* (VM-20).

To the extent an actuary participates in the application of principle-based methods in the preparation of life insurance reserves under VM-20, whether assigned by the company under VM-G or not, that actuary should follow the applicable guidance in this standard. In the event of a conflict between the provisions of the *Valuation Manual* in effect at the time the actuarial services are provided and the provisions of the ASOP, the provisions of the *Valuation Manual* shall govern.

If the actuary departs from the guidance set forth in this standard in order to comply with the *Valuation Manual* or applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the original referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for **valuation dates** on or after December 31, 2017.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice. Definitions 2.1, 2.2, 2.4, 2.6, 2.8, 2.11, 2.13, 2.14, 2.16, 2.17, 2.20, and 2.21 are intended to conform to those in the *Valuation Manual*.

- 2.1 **Anticipated Experience Assumption**—An expectation of future experience for a **risk factor** given available, relevant information pertaining to the assumption being estimated.
- 2.2 **Cash Flow Model**—A model designed to simulate asset and liability cash flows.
- 2.3 **Credibility**—A measure of the predictive value in a given application that the actuary attaches to a particular set of data (*predictive* is used here in the statistical sense and not in the sense of predicting the future.)
- 2.4 **Deterministic Reserve**—A reserve amount calculated under a defined **scenario** and a single set of assumptions.
- 2.5 **Granularity**—The level of detail built into model components, such as time intervals, cell structure, or assumptions that vary by cell.
- 2.6 **Margin**—An amount included in the assumptions, except when the assumptions are prescribed, used to determine the modeled reserve that incorporates conservatism in the calculated value consistent with the requirements of the various sections of the *Valuation Manual*. It is intended to provide for estimation error and adverse deviation.
- 2.7 **Minimum Reserve**—The reserve described in section 2 of VM-20 that is based on one or more of the following calculations: **net premium reserve**, **stochastic reserve**, and **deterministic reserve**.
- 2.8 **Model Segment**—A group of policies and associated assets that are modeled together to determine the path of net asset earned rates.
- 2.9 **Modeling Cell**—A group of policies or assets that are treated in a model as being completely alike with regard to relevant **risk factors** and contractual provisions and that may, therefore, be represented by a single composite policy or asset.
- 2.10 **Net Premium Reserve**—The amount determined in section 3 of VM-20.
- 2.11 **PBR Actuarial Report**— The supporting information prepared by the company as required by VM-31.
- 2.12 **Principle-Based Reserve**—A reserve amount that results from a principle-based valuation, which is defined in the NAIC’s model *Standard Valuation Law*.

- 2.13 **Prudent Estimate Assumption**—A **risk factor** assumption developed by applying a **margin** to the **anticipated experience assumption** for that **risk factor**.
- 2.14 **Qualified Actuary**—An individual who is qualified to sign the applicable statement of actuarial opinion in accordance with the American Academy of Actuaries qualification standards for actuaries signing such statements and who meets the requirements specified in the *Valuation Manual*.
- 2.15 **Relevant Experience**—Experience that exhibits characteristics that are sufficiently similar to the characteristics of the liabilities, assets, and environments being simulated to make the experience appropriate, in the actuary’s professional judgment, as a basis for determining the **anticipated experience assumptions**.
- 2.16 **Risk Factor**—An aspect of future experience that is not fully predictable on the **valuation date**.
- 2.17 **Scenario**—A projected sequence of events used in the **cash flow model**, such as future interest rates, equity performance, or mortality.
- 2.18 **Sensitivity Testing**—The process of calculating the effect of varying one or more assumptions.
- 2.19 **Starting Assets**—A portfolio of assets that will be used to fund projected policy cash flows arising from the policies funded by those assets.
- 2.20 **Stochastic Reserve**—The amount determined by applying a measure (e.g., a prescribed CTE level) to the distribution of **scenario** reserves over a broad range of stochastically generated **scenarios** and using **prudent estimate assumptions** for all assumptions not stochastically modeled.
- 2.21 **Valuation Date**—The date when the reserve is to be valued as required by the *Standard Valuation Law*.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Regulatory Requirements**—An actuary performing actuarial services within the scope of this standard should be familiar with applicable law and regulation including the *Standard Valuation Law* and the *Valuation Manual*, with a focus on the sections (or parts of sections) of the *Valuation Manual* that govern life insurance coverages.

Under the *Standard Valuation Law* and the *Valuation Manual*, compliance is the responsibility of the company. Section VM-G of the *Valuation Manual* requires the company to assign certain responsibilities to one or more **qualified actuaries**, including the responsibility for overseeing the calculation of **principle-based reserves** and the responsibility for verifying that the assumptions, methods, and models used in such

calculations, as well as internal standards and controls, appropriately reflect the requirements of the *Valuation Manual*.

3.2 **Exclusion Tests**—Section 6 of VM-20 provides for certain exclusion tests that, if satisfied, allow the insurer to dispense with the calculation of the **stochastic reserves** or **deterministic reserves** for a group of policies.

3.2.1 **Grouping**—In constructing groups of contracts for the purposes of applying the stochastic exclusion ratio test and the deterministic exclusion test, the actuary may not group together contract types with significantly different risk profiles.

In evaluating the risk profiles of policy groupings, the actuary should consider the following:

- a. the risk profile indicated by the contractual provisions of the policies and the impact of varying **scenarios** on that risk profile;
- b. results of other analyses performed that may provide an indication of the risk profile of a proposed group of policies (for example, economic capital analysis or cash flow testing analysis);
- c. the risk profile indicated by the demographics of the policyholders and insureds; and
- d. any other information available to the actuary that indicates that the policies have similar or significantly different risk profiles.

3.2.2 **Certification**—In some cases, the stochastic exclusion test may be satisfied by providing a certification by a **qualified actuary** in accordance with section 6 of VM-20 that a group of policies is not subject to material interest rate risk or asset return volatility risk. When providing such a certification, the actuary should consider the significance of the impact on reserves of recognizing the interest rate or asset return volatility risks in the reserve calculations. Examples of the types of methods that may be used to support such a certification are provided in the guidance note of section 6 of VM-20. In applying these or any other method, the actuary should consider the possible impact on reserves of factors such as the following:

- a. changes in the economic environment or competitive landscape that may cause a material interest rate or asset return volatility risk to arise in the future; and
- b. other factors found to be significant based on the results of analyses that may have been completed as part of an economic capital measurement process or cash flow testing.

In certifying that a group of policies is not subject to material interest rate risk or asset return volatility risk and thus may be excluded from calculation of a **stochastic reserve**, the actuary may rely upon an analysis performed for a different purpose that uses a set of **scenarios** which, based on the actuary's professional judgement, adequately captures the interest rate or asset return volatility risk.

- 3.3 **Modeling Stochastic and Deterministic Reserves**—When calculating **stochastic reserves** or **deterministic reserves**, the actuary should use assumptions, methods, and models as described in sections 7, 8, and 9 of VM-20. The actuary should use modeling methods that are appropriate for the business being valued.

3.3.1 **Model Segments**—Section 7 of VM-20 requires companies to design and use a **cash flow model** that uses **model segments** that are consistent with the insurer's asset segmentation plan, investment strategies, or approach used to allocate investment income for statutory purposes. A separate **cash flow model** should be used for each **model segment**. The construction of **model segments** facilitates the calculation of net asset earned rates and discount rates. To do this, the actuary should model the reinvestment and disinvestment of cash flows in accordance with an investment strategy. Usually, this means that the segment should contain only policies that will be managed under a common investment policy, particularly with regard to reinvestment and borrowing practices. If this is not the case, the actuary should take into account the effects of variations in the proportions of the policies subject to each such investment policy due to plausible changes in future conditions and demonstrate that the **stochastic reserve** or **deterministic reserve** being calculated appropriately recognizes such variations.

The actuary may assign policies with offsetting risks to the same **model segment** if the assignment is consistent with the aggregation rules of the *Valuation Manual* and otherwise appropriate (for example, when there is a common investment strategy or when policies are managed together as part of an integrated risk management process) and the risks may reasonably be assumed to remain offsetting under plausible changes in future conditions. The actuary should identify offsetting risks and the rationale for assigning policies with offsetting risks to the same **model segment** in the model documentation.

3.3.2 **Model Validation**—The actuary should review a static validation that confirms that initial values (for example, **net premium reserves**, face amount, policy count, premium in force, account values, net amount at risk, and other measures of inforce exposure to risk) materially balance to the insurer's records as of the **valuation date** used to calculate the **stochastic reserves** and **deterministic reserves**. The actuary should consider the extent to which a model has been previously reviewed as well as controls around model changes in determining the level of model review required for the current valuation. A model that, in the actuary's judgment, was previously subject to rigorous review and testing, and

was subsequently updated in a controlled manner and validated, may require less rigorous current review.

The actuary should obtain evidence that the models used to perform the calculations discussed here appropriately represent the exposures and cash flows of the business being studied under varying experience levels. To this end, the actuary should consider conducting additional validation procedures such as the following:

- a. performing a dynamic validation of the model that involves comparing the cash flows produced by the model to the actual historical data to verify, where appropriate, that the model produces results reasonably similar to those actually experienced;
- b. evaluating the consistency of the model’s results with the results of any other existing internal systems that have similar calculations, such as economic capital analysis and cash flow testing analysis; and
- c. performing an analysis that critically reviews each of the changes made to the model since it was last validated.

3.3.3 Liability Modeling Considerations—In determining the **stochastic reserve** or **deterministic reserve**, the actuary should reflect relevant policy provisions and risks specific to the insurance contracts, including those arising from guarantees that have a reasonable probability of materially affecting future policy cash flows or other contract-related cash flows. Certain costs that are not specific to the insurance contract (for example, federal income taxes, shareholder dividends, and costs related to operational failures, mismanagement, fraud, and regulatory risks) are not recognized in the reserve calculation.

- a. The actuary may group policies with similar risk profiles in representative **modeling cells**. The actuary should comply with the stipulations for simplifications, approximations, and modeling efficiency techniques found in section 2 of VM-20. Acceptable demonstrations of compliance may include, but are not limited to, the following:
 - 1) comparison of the results of the grouping based on a representative sample of **modeling cells** to the results of a *seriatim* calculation on the same representative sample; and
 - 2) a demonstration that extremes of adverse experience for a sample set of **scenarios** have closely similar effects on the **stochastic reserve** or **deterministic reserve** for all policies assigned to the same sample **modeling cells**.

Such demonstrations may be done as of a date other than the **valuation date** and need not be updated every year if the actuary determines that conditions have not changed in a manner that would materially affect the result.

- b. In projecting policy or other liability cash flows, the actuary should consider the impact of projected changes in experience on cash flows arising from nonguaranteed elements (including policyholder dividends). For example, if the insurer bases credited rates on current asset yields, the actuary would model projected credited rates that are consistent with projected asset yields and with the company's policy for determining nonguaranteed elements. If such policy is not written, then the actuary would determine the approach the company has historically followed in setting nonguaranteed elements.

The actuary should evaluate whether the modeling of nonguaranteed elements is appropriately aligned with the company's policy or historical approach for determining nonguaranteed elements and document those findings. The actuary should consider contractual provisions, regulatory constraints, current management policy, and past company actions, such as any lag between a change in experience and a change in nonguaranteed elements, when projecting future nonguaranteed element changes.

The actuary should determine policyholder behavior assumptions that are consistent with the nonguaranteed element projections. For example, consistency may require increased lapse rates if credited interest rates tend to lag projected new money rates in a rising interest rate **scenario**.

- 3.3.4 **Use of Prior Period Data**—Section 2 of VM-20 provides that the company may calculate the **stochastic reserve** and the **deterministic reserve** as of a date no earlier than three months before the **valuation date**, using relevant company data, provided an appropriate method is used to adjust those reserves to the **valuation date**.

When using a calculation of a **stochastic reserve** or **deterministic reserve** as of a date prior to the **valuation date**, the actuary should document the nature of any updating adjustments made to the reserves and why the use of prior period data plus such adjustments would not produce a material difference from calculating reserves as of the **valuation date**. The actuary should also demonstrate that any material events known to the actuary that occurred between the two dates do not diminish the appropriateness of the results.

When evaluating the appropriateness of using prior period data, the actuary should consider the following:

- a. a comparison of the asset portfolio between the two dates by type of asset, mix of assets by quality, and the nature of assets (for example, duration, yield, and type) and a comparison of the size and nature of the inforce policies between the two dates (for example, average size, policy counts, and mix);
 - b. changes in the interest rate curve, interest spreads, and equity values between the two dates, including, for example, changes causing guarantees to be “in the money” that were not as of the prior date, and vice-versa;
 - c. changes in policyholder behavior (such as surrenders, lapses, or premium patterns); and
 - d. validation procedures, such as comparing a subset of policies by calculating reserves as of both dates.
- 3.4 Assumptions for Stochastic and Deterministic Reserves—In setting **anticipated experience assumptions**, the actuary should consider ASOP No. 23, *Data Quality*, and ASOP No. 25, *Credibility Procedures*, as applicable. Within the range of acceptable practices described in VM-20, the actuary should use professional judgment in setting reasonable assumptions.

Section 9 of VM-20 states that the company shall use its own experience, if relevant and credible, to establish an **anticipated experience assumption** for any **risk factor**. Section 9 goes on to say that if the company experience is not available or credible, the company may use industry experience or other data to establish the **anticipated experience assumption**, making modifications as needed to reflect the circumstances of the company.

Where no relevant and credible company experience is available, the actuary should use professional judgment in advising on the adoption and modification of other sources of experience data. Examples of items that may result in modifications to the experience data include the company’s underwriting and administrative practices, market demographics, product design, and economic and regulatory environments.

Section 9 of VM-20 requires **sensitivity testing** to determine which assumptions have the most significant impact on reserves. The actuary should consider performing more extensive analyses in setting assumptions that have a significant impact on valuation results.

The actuary should consider **granularity** in setting assumptions given the model structure. The actuary should use professional judgment to set **granularity** to reflect expected experience appropriately.

- 3.4.1 **Mortality**—To the extent appropriate, the actuary should base **anticipated experience assumptions** for mortality on the insurer’s underwriting standards and mortality experience.

Section 9 of VM-20 limits the exposure period for a company’s own experience to between three and ten years and requires the company to define mortality segments for which separate mortality assumptions will be set. The methods for determining **credibility** of the experience and the methods for grading experience tables into industry standard tables are set forth in section 9 of VM-20.

In choosing an exposure period, consideration should be given to the possibility that data may be obsolete if the period is too long, but that a shorter period may reduce the **credibility** to be assigned to the data. The actuary should refer to ASOP No. 25 for guidance on **credibility**. The actuary should consider the possibility of combining several mortality segments to achieve a higher level of **credibility**, but in doing so the actuary should be aware that section 9 of VM-20 allows such combining only if the mortality experience was determined for the combined segments and then appropriately subdivided for valuation purposes.

The actuary should consider reflecting the effect that lapse or nonrenewal activity or other anticipated policyholder behaviors has had or would be expected to have on mortality. The actuary should consider the effect of any anticipated or actual increase in gross premiums or cost of insurance charges on lapse rates and the resulting effect on mortality due to antiselection.

In determining anticipated mortality, the actuary should consider mortality trends that have been observed in company, industry, or population experience and determine the extent to which such trends are expected to continue.

If the actuary believes mortality trends are expected to continue beyond the **valuation date** and would cause an increase to reserves, then the actuary should consider reflecting such trends in the assumptions for the cash flow projections. Otherwise, for calculating reserves, the actuary should not project mortality trends beyond the **valuation date**.

While mortality improvement beyond the **valuation date** is not to be used for calculating reserves, the actuary may include implicit **margins**, such as absence of mortality improvement beyond the **valuation date**, when estimating the impact of individual and aggregate **margins** in the **deterministic reserve** that the actuary is required to report under VM-31.

- 3.4.2 **Investment Experience**—The actuary should make reasonable assumptions about future investment experience that take into consideration the insurer’s asset/liability management strategy for the product portfolio.

- a. The process for obtaining sets of **scenarios** of future U.S. Treasury rates and future equity values is specified in appendix 1 of VM-20. In applying these sets of **scenarios**, the actuary may use **scenario** reduction techniques. When using these techniques, the actuary should be satisfied that the techniques used are appropriate to the situation and comply with the requirements of section 7 of VM-20.
 - b. Factors and methods for determining prescribed default assumptions and spread assumptions are set forth in section 9 and appendix 2 of VM-20. The prescribed default assumptions apply to reinvested assets as well as **starting assets**. The actuary should model the reinvestment of cash flows in accordance with the insurer’s investment strategy for the **model segment** or in accordance with a strategy that is closely similar to the actual strategy currently being used for the **model segment**. If the insurer’s investment strategy is to duration-match assets and liabilities, the actuary should reflect the rebalancing needed specific to each **scenario** to the extent practicable. The actuary should comply with the requirement in section 7 of VM-20 that the modeled reserve is not less than the reserve that would have been obtained by using the alternative investment strategy.
 - c. The actuary should incorporate variability in the timing of the asset cash flows related to movements in interest rates, such as prepayment risk, as described in section 7 of VM-20 into the model. For example, the actuary should model prepayment, extension, call, and put features in a manner consistent with current asset adequacy analysis practice. (For related guidance, see ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, and ASOP No. 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*.)
- 3.4.3 **Policyholder Behavior**—In modeling anticipated policyholder behavior, the actuary should develop assumptions related to option elections available to policyholders, including, but not limited to, premium payment patterns, premium persistency, surrenders, withdrawals, transfers between fixed and separate accounts on variable products, and benefit utilization.
- a. **General Considerations**—The actuary should consider all policyholder behavior assumptions listed in section 9 of VM-20. In addition, the actuary should consider:
 - 1) varying policyholder behavior assumptions by additional characteristics not listed in section 9 of VM-20, when deemed to be material for that block of business;
 - 2) how policyholder behavior assumptions impact or interact with other assumptions used in the valuation;

- 3) whether it is reasonable to base assumed policyholder behavior on the outcomes and events exhibited by historical experience, especially when modeling policyholder behavior for a new product benefit or feature or when modeling a significantly different economic environment. Historical experience, when available, is often a good basis for such assumptions; however, the actuary should also consider the extent to which past behavior is a reasonable indicator of future behavior. For example, market or environmental changes can make historical experience less relevant;
- 4) whether any options embedded in the product, such as term conversion or policy loan options, may affect policyholder behavior. For example, as the value of a product option increases, the likelihood that policyholders will behave in a manner that maximizes their financial interest in the contract will increase. This may result in lower lapses or higher benefit utilization than otherwise anticipated;
- 5) whether anticipated policyholder behavior assumptions are consistent with **relevant experience** and reasonable future expectations. At any duration for which relevant data do not exist, the actuary should also consider the following:
 - i. the policyholder may act like a rational investor who will consider the impact of different actions (for example, lapse the policy, persist, or take out a loan) on the value of the policy;
 - ii. the policyholder may place value on factors other than maximizing the policy's financial value (for example, convenience of level premiums or personal budget choices); and
 - iii. the policy's full economic value to the policyholder depends not only on its currently realizable value but also on factors not available for analysis, such as the health of the insured and the financial circumstances of the beneficiaries and policyholder; and
- 6) use of a scenario-dependent formulation for anticipated policyholder behavior. If the actuary uses a static assumption for policyholder behavior, the actuary should document the reasoning. The actuary should also consider creating demonstrations to support such reasoning. For **risk factors** that are scenario-

dependent, the actuary should incorporate a reasonable range of future expected behavior consistent with the economic **scenarios** and other variables in the model. In the absence of evidence to the contrary, modeling extreme behavior may not be necessary; however, the actuary should test the sensitivity of results to understand the materiality of using alternate assumptions.

- b. **Premium Payment Assumptions**—The actuary should consider that not all policyholders will exhibit the same premium payment pattern. In setting assumptions about future premium payments for policies with fixed future premiums, the actuary should consider available policy options. When determining premium payment patterns, the actuary should consider the impact of non-cash options, such as loans to pay premiums, and the value a policyholder places on non-forfeiture benefits.

For policies with flexible or nonguaranteed premiums, the actuary, in designing assumptions about future premium payments, should consider such factors as the limitations inherent in the policy design, the amount of past funding of the policy, and the marketing of the policy. Premium payment assumptions may also vary by interest rate or market **scenario**. The actuary should consider using multiple premium payment pattern assumptions, for example, by subdividing the business into several **modeling cells**, each with a separate payment pattern assumption. If this is not done and consequently the business has one **modeling cell** and average pattern, the actuary should comply with the stipulations for simplifications, approximations, and modeling efficiency techniques found in section 2 of VM-20. Acceptable demonstrations of compliance may include results of **sensitivity testing**.

In setting premium payment assumptions, the actuary should consider the premium payment patterns listed in VM-31. The actuary should consider the following marketing factors that may affect the level and continuation of premium payments:

- 1) emphasis on death benefits;
- 2) emphasis on savings accumulation or tax advantages;
- 3) emphasis on premium payment flexibility;
- 4) policy illustrations showing premiums for a limited period;
- 5) automatic electronic payment of premiums;
- 6) bonuses for higher premiums or assets;

- 7) nonguaranteed elements; and
- 8) other factors the actuary deems appropriate.

In selecting premium payment patterns for modeling purposes, the actuary should consider the premium payment patterns listed in VM-31. The actuary may consider patterns based on one or more of the following: target premium, illustrated premium, billed premium, minimum premium, maximum commissionable premium, or continuation of past premium levels. The actuary should consider that a policyholder may utilize more than one premium payment pattern during the lifetime of the policy. For example, some policyholders may pay illustrated premiums for several years, followed by a period of paying minimum premiums to keep their policy in force.

- c. Partial Withdrawal and Surrender Assumptions—The actuary should consider using a scenario-dependent formulation for modeling partial withdrawals and surrenders that is responsive to factors such as the projected interest rate environment, the funding level, premium increases, and benefit triggers. In setting partial withdrawal and surrender assumptions, the actuary should consider the insured's age and gender, the policy duration, the existence of policy loans, and scheduled changes in premium and benefit amounts. In addition, the actuary should consider taking into account such factors as the policy's competitiveness, surrender charges, interest or persistency bonuses, taxation status, premium frequency and method of payment, changes in nonguaranteed elements, and any guaranteed benefit amounts. The actuary should consider the fact that rates of surrender can decline dramatically prior to a scheduled sharp increase in surrender benefit (sometimes known as a "cliff") caused by a decrease in surrender charge, a bonus, or a maturity benefit and that rates of surrender can rise materially after such an event.
- 3.4.4 Expenses—The actuary should review the expenses that have been allocated, for financial reporting purposes, in recent years to the block of policies being evaluated. Expenses that are classified in financial reporting as "direct sales expenses" or as "taxes, licenses, and fees" should be allocated to the activity creating the expense. All non-direct expenses should be allocated to the appropriate activity count (for example, per policy or per claim) and by duration where appropriate, using reasonable principles of expense allocation and unit costs. The actuary should use this analysis as the basis for projecting expenses in doing the reserve valuation, unless, in the actuary's professional judgment, the expense experience is not a suitable basis for projection, in which case other sources of data may be used, as set forth in section 3.4.4(b), Applying Recent Expense Experience.

- a. **Expense Inflation**—Section 9 of VM-20 requires expenses to reflect the impact of inflation. The actuary should appropriately adjust unit costs in the projection for the effect of inflation. Possible sources of information about inflation assumptions are published projections of the consumer price index or the price deflator, such as the rate selected by the Social Security Administration for its long-term intermediate projection. The actuary may also consider the possibility that future inflation rates will vary if prevailing new-money rates change. The actuary should review the resulting projection of implied “real return” to ensure that the inflation and investment return assumptions are consistent.
- b. **Applying Recent Expense Experience**—In reviewing recent experience, the actuary should assure that the expenses being allocated to the block of policies being evaluated represent all expenses associated with the block, including overhead, according to statutory accounting principles. If the recent experience on the block is not, in the actuary’s professional judgment, a suitable basis for projection, the actuary may consider the use of experience on a closely similar type of policy within the company or intercompany studies.

The actuary should consider including a provision for overhead that accounts for holding company expenses associated with running the life insurance business (for example, rent and executive compensation) that have not been recognized in other charges to or reimbursements from the life company.

In developing expense assumptions, the actuary should include acquisition expenses and significant non-recurring expenses expected to be incurred after the **valuation date** to the extent allocable to the business in force at the **valuation date**. The actuary should include provision for unusual future expenses that may be anticipated, such as severance costs or litigation costs.

If system development costs or other capital expenditures are amortized in the annual statement, the actuary should reflect such amortization in the assumptions. If such expenditures occurred in the exposure period and were not amortized, the actuary may exclude them from the experience but should consider the possibility that similar expenditures will occur in the future.

In projections of direct expenses, the actuary should consider recent changes in company practice, such as changes in commission rates that may not have been fully reflected in the experience. The actuary’s projection of taxes, licenses, and fees should be based on a reasonable activity base (such as premium).

The actuary should reflect recent changes in company practice, such as changes in staffing levels that could increase non-direct expenses in the projection. In the case of changes that are planned but not fully implemented, the actuary may consider reflecting in the projection the probability that the changes will increase future expenses.

3.4.5 **Taxes**—Section 9 of VM-20 requires the company to determine reserves using models in which federal and foreign income taxes are excluded from consideration. The actuary should recognize all other taxes in the projection models.

3.4.6 **Determining Assumption Margins**—After the **anticipated experience assumptions** are established, the actuary should modify each assumption to include a **margin** for estimation error and moderately adverse deviation, such that the **stochastic reserve** or **deterministic reserve** being calculated is increased, except as indicated below. The actuary should incorporate an adequate **margin** with respect to assumptions that are modeled dynamically (i.e., assumed to vary as a function of a stochastic assumption, such as lapse rates) throughout all variations. The actuary is not required to include **margins** in assumptions for risks that are to be modeled stochastically as long as a moderately adverse proportion of the stochastically generated results is used for establishing the **stochastic reserve**.

- a. **Mortality Margins**—Section 9 of VM-20 prescribes the **margins** that are to be added to the anticipated experience mortality assumptions but also requires the establishment of an additional **margin** if the prescribed **margin** is inadequate. The actuary should use professional judgment in determining such additional **margin**. The guidance in the remainder of this section on determining assumption **margins** does not apply to the prescribed mortality assumptions, but does apply when determining additional **margins** for mortality.
- b. **Establishing Margins**—For each assumption that includes a **margin**, the actuary should reflect the degree of risk and uncertainty in that assumption in determining the magnitude of such **margin**. When determining the degree of risk and uncertainty, the actuary should take into account the magnitude and frequency of fluctuations in **relevant experience**, if available. In doing so, the actuary should consider using statistical methods to assess the potential volatility of the assumption in setting an appropriate **margin**.

In determining the **margins** for policyholder behavior assumptions for which there is an absence of credible and **relevant experience**, the actuary should follow the requirements of section 9 of VM-20 and consider the following:

- 1) experience trends by duration where there is relevant data; and
- 2) the expectation that experience will change in the future due to policy features, economic conditions, or other factors.

After establishing **margins** for individual assumptions, the actuary should review the cumulative impact for all assumptions to determine whether, in the actuary's professional judgment, the **margins** are at a level that provide for an appropriate amount of adverse deviation in the aggregate. The actuary then may reduce the **margin** for an individual **risk factor** provided the actuary can demonstrate that the reduction is reasonable, considering the correlations between this **risk factor** and other **risk factors** (see also section below on "Overall Impact of Assumption Margins").

- c. **Sensitivity Testing**—The actuary should use **sensitivity testing** to evaluate the significance of an assumption in determining the valuation results. For assumptions that have a non-material impact on reserves, the actuary may decide to add little or no **margin** to the **anticipated experience assumption**.
- d. **Overall Impact of Assumption Margins**—In evaluating the appropriateness of the assumption **margins**, the actuary may consider the amount of **margin** in the **deterministic reserve** for a group of policies, unless: 1) the actuary believes the impact of the individual **margins** would be significantly lower under the **stochastic reserve** calculation, and 2) the **stochastic reserve** is larger than the **deterministic reserve**. If these two conditions are met, the actuary may determine that the appropriateness of assumption **margins** should be evaluated on the basis of **stochastic reserves**.

If the actuary determines that evaluating the assumption **margins** in the **deterministic reserve** is appropriate, the actuary should compare the **deterministic reserve** to the **deterministic reserve** without **margins** (i.e., the **deterministic reserve** determined according to section 4 of VM-20 but using **anticipated experience assumptions**) for a group of policies. If the actuary determines that evaluating the assumption **margins** should be done on the basis of **stochastic reserves**, the actuary should compare the **stochastic reserve** to a **stochastic reserve** without **margins** (i.e., the **stochastic reserve** determined according to section 5 of VM-20 but using **anticipated experience assumptions**) for a group of policies. For this purpose, "group of policies" may mean a line of business, or the actuary may make the comparison on several groups of policies within a line of business. The actuary should set **margins** for individual assumptions such that the **stochastic reserves** or **deterministic reserves** being calculated are greater than the corresponding reserves without **margins** by an amount

that is consistent with the risks to which the group of policies is exposed. In evaluating the appropriateness of the assumption **margins** to the risks to which the group of policies is exposed, the actuary may, for example, relate the assumption **margins** to a percentage of the present value of risk capital requirements on the group of policies, consider the conditional tail expectation implied by the use of **prudent estimate assumptions**, or consider historical variations in experience.

If the actuary concludes that the assumption **margins** are either excessive or inadequate in comparison to the risks to which the group of policies is exposed, the actuary should adjust **margins** for individual assumptions so that the **stochastic reserve** or **deterministic reserve** being calculated is appropriate in comparison to the risks to which the group of policies is exposed. The actuary may reduce the initially determined **margin** if the actuary can demonstrate that the method used to justify the reduction is reasonable, considering (1) the range of **scenarios** contributing to the conditional tail expectation calculation, (2) the **scenario** used to calculate the **deterministic reserve**, or (3) appropriate adverse circumstances for **risk factors** not stochastically modeled.

When calculating the aggregate **margin** for VM-31 purposes, the actuary should follow the requirements of VM-31.

3.5 **Reinsurance**—This section applies to reserves for policies ceded or assumed under the terms of a reinsurance agreement. The terms “reinsurance” and “reinsurer” include retrocession and retrocessionnaire, respectively.

3.5.1 **Stochastic and Deterministic Reserves Net of Reinsurance**—According to section 8 of VM-20, the **stochastic reserves** and **deterministic reserves** shall be based on assumptions and models that project cash flows that are net of reinsurance ceded. Thus, the actuary should use cash flows that reflect the effects of reinsurance assumed and ceded when calculating **stochastic reserves** and **deterministic reserves**.

The actuary should not calculate the **stochastic reserve** or **deterministic reserve** by deducting a formulaic reinsurance credit (such as the Statement of Statutory Accounting Principles No. 61 reserve credit) from a **stochastic reserve** or **deterministic reserve** that is based on hypothetical pre-reinsurance cash flows as discussed in section 3.5.2 below, unless, in the actuary’s professional judgment, such a procedure meets the criteria for using simplifications, approximations, and modeling efficiency techniques found in section 2 of VM-20.

3.5.2 **Pre-Reinsurance-Ceded Minimum Reserve**—Section 8 of VM-20 requires a pre-reinsurance-ceded **minimum reserve**, if needed, to be calculated pursuant to the requirements of the *Valuation Manual*, using methods and assumptions consistent with those used in calculating the **minimum reserve**, but excluding the effect of

ceded reinsurance. Determining the **minimum reserve** requires the calculation on a pre-reinsurance-ceded basis of all necessary reserve components, which may include a **net premium reserve**, a **stochastic reserve**, and a **deterministic reserve** for each group of policies defined in section 2 of VM-20, and the application of any exclusion tests.

Section 8 of VM-20 states that the assumptions used in calculating the pre-reinsurance-ceded **minimum reserve** should represent company experience in the absence of reinsurance—for example, assuming that the business was managed in a manner consistent with the manner that retained business is managed. In arriving at the assumptions for use in the **cash flow model** required for **deterministic reserve** and **stochastic reserve** calculations, the actuary should consider using methods and assumptions for the ceded business that are consistent with those used for retained business of the same kind (reflecting any known differences, such as differences in average policy size). For example, the calculation of a pre-reinsurance-ceded **stochastic reserve** or **deterministic reserve** requires the construction of a hypothetical portfolio of **starting assets** and a corresponding model investment strategy. Possible methods for constructing the hypothetical portfolio include, but are not limited to, the following:

- a. basing the portfolio on assets available at the time the cash flows were ceded;
- b. assuming the portfolio consists of assets consistent with those backing the portion of the business retained for policies of the same kind; and
- c. assuming the portfolio consists of a pro-rata slice of the assets of the reinsurer that back the reserve for the segment of its business that includes the ceded policies.

If the hypothetical portfolio is assumed to include **starting assets** held by the reinsurer or another party, the actuary should refer to the guidance in section 3.5.7 of this ASOP.

- 3.5.3 **Credit for Reinsurance Ceded**—According to section 8 of VM-20, the credit for reinsurance is the difference between the excess, if any, of the pre-reinsurance-ceded **minimum reserve** and the post-reinsurance-ceded **minimum reserve**. The actuary should apply the exclusion criteria and formulas of section 2 of VM-20 separately for each of these **minimum reserves** and should apply the guidance of this standard to calculate any needed **stochastic reserve** or **deterministic reserve** component. The actuary should be aware that the credit for reinsurance might not be the difference between the pre- and post-reinsurance-ceded versions of the same reserve component.

The actuary should allocate the credit for reinsurance ceded using a method that is consistent with section 8 of VM-20 and produces reasonable results. The actuary should document the allocation methodology used.

- 3.5.4 Recognition of Reinsurance Cash Flows in the Deterministic Reserve or Stochastic Reserve—VM-20 requires the calculation of the **stochastic reserve** or **deterministic reserve** to be based on assumptions and **margins** that are appropriate for each company involved in a reinsurance agreement. The two parties to the agreement are not required to use the same assumptions and **margins** for the reinsured policies.

The actuary should choose assumptions for projecting cash flows for assumed reinsurance and for ceded reinsurance that consider all aspects of applicable reinsurance agreements, including all elements of the agreements that the assuming company can change (such as the current scale of reinsurance premiums and expense allowances) and all actions either party may take that could affect the reinsurance cash flows (such as changes by the ceding company in nonguaranteed elements or the recapture of ceded policies). The actuary should consider whether such changes depend on the economic **scenario** being modeled.

- a. In modeling nonguaranteed elements, the actuary may consider any limits placed upon the reinsurer's ability to change the terms of the treaty, including the presence or absence of guarantees of reinsurance premiums and allowances; known actions of the ceding company, such as changes in dividend scales; known past practices of reinsurers in general and the assuming reinsurer in particular regarding the changing of such terms; and the ability of the ceding company to modify the terms of the reinsured policies in response to changes in the reinsurance agreement.
- b. The actuary should consider any actions that have been taken or appear likely to be taken by the ceding company or direct writer, if different, that could affect the expected mortality or other experience of assumed policies. Examples of such actions include internal replacement programs and table-shave programs.
- c. The actuary should choose assumptions and **margins** assuming that all parties to a reinsurance agreement are knowledgeable of the terms of the reinsurance agreement and will exercise options to their advantage, taking into account the context of the agreement in the entire economic relationship between the parties.
- d. In applying the considerations in paragraphs a, b, and c above, the actuary should take into account the impact of the economic conditions inherent in the **scenario** being modeled.

- e. Section 8 of VM-20 requires the use of stochastic modeling or analysis to set assumptions for **risk factors** associated with certain provisions of reinsurance agreements. A guidance note in section 8 of VM-20 identifies stop-loss reinsurance as an example of such a provision. The actuary should consider the distribution of claims for the coverage provided under the provisions of the reinsurance agreement to determine whether and to what extent a single deterministic valuation assumption adequately captures the risk.

Stochastic modeling of assumptions for **risk factors** for which a single deterministic valuation assumption is inadequate may be introduced directly in the **cash flow model**, or a separate stochastic analysis outside the model may be performed. In deciding between these approaches, the actuary should consider the degree to which a separate stochastic analysis of assumptions should interact with the variables in the **cash flow model**. When there is a high degree of interaction, the actuary should consider incorporating the analysis directly into the **cash flow model**.

In setting **margins** for such assumptions, the actuary should take into account any conservatism introduced by the stochastic modeling method (such as the conservatism introduced by a conditional tail expectation method).

3.5.5 **Margin for Risk of Default by a Counterparty**—Section 8 of VM-20 requires the company to establish a **margin** for the risk of default if the company has knowledge that a counterparty is financially impaired. In the absence of such knowledge (or if the impact on cash flows is insignificant) no such **margin** is required. In determining the risk **margin** for counterparty default if one is needed, the actuary may rely upon the company's determination of whether such impairment exists and the probability of default.

3.5.6 **Reinsurance Agreements that Do Not Qualify for Credit for Reinsurance**—Section 8 of VM-20 states that if a reinsurance agreement or amendment does not qualify for credit for reinsurance, but treating the reinsurance agreement or amendment as if it did so qualify would result in a reduction to the company's surplus, then the company shall increase the **minimum reserve** by the absolute value of such reduction in surplus. The impact on surplus may be ascertained by calculating the **minimum reserve** with and without reflection of the non-qualifying reinsurance agreement or amendment. If the actuary concludes that such calculations are unnecessary, the actuary should document the testing and rationale leading to that conclusion.

3.5.7 **Assets Held by the Counterparty or Another Party**—If, under the terms of the reinsurance agreement, some of the assets supporting the reserve are held by the counterparty or another party, the actuary should determine whether such assets should be modeled to determine discount rates or projected cash flows. In making

this determination, section 8 of VM-20 requires that the actuary consider the degree of linkage between the portfolio performance and the calculation of the reinsurance cash flows and the sensitivity of the valuation result to the asset portfolio performance. If the actuary concludes that modeling is unnecessary, the actuary should document the testing and rationale leading to that conclusion. If the actuary determines that modeling is necessary, the actuary may make use of the other party’s modeling of the assets it holds, since section 8 of VM-20 provides that one party to a reinsurance transaction may make use of reserve calculations of the other party. The actuary should demonstrate that such modeling is consistent with the other assumptions made in the calculation of the **stochastic reserve** or **deterministic reserve** or that appropriate adjustments have been made.

- 3.6 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23 for guidance. In addition, where the actuary relies on others for data, assumptions, projections, or analysis in determining the **principle-based reserves**, the actuary should comply with specific requirements of the *Valuation Manual*.
- 3.7 **Documentation**—Section 2 of VM-31 states that the **PBR actuarial report** must include documentation and disclosure sufficient for another actuary qualified in the same practice area to evaluate the work. The actuary should include the rationale for all material decisions and actuarial certifications made and information used by the company in complying with the **minimum reserve** requirements and in complying with the documentation and reporting requirements set forth in the *Valuation Manual* with respect to the **PBR actuarial report**.

To the extent practicable, the actuary should support the retention of documentation required by section 2 of VM-31 for a reasonable period of time (and no less than the length of time necessary to comply with the *Valuation Manual*, and any statutory, regulatory, or other requirements). The actuary need not retain the documentation personally; for example, the actuary’s principal may retain it.

The **qualified actuary** assigned responsibility for a group of policies under VM-G should document the procedures performed to support required verifications. The actuary may include such documentation in the **PBR actuarial report**.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communications**—When issuing actuarial communications under this standard, the actuary should refer to ASOP Nos. 23 and 41. In addition, the actuary should refer to ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations*, where applicable.

4.2 **PBR Actuarial Report**—The **qualified actuary** assigned by the company the responsibility of preparing the **PBR actuarial report** or a subreport for a particular group of policies should follow the requirements of VM-31.

Because VM-20 requires the company, rather than the **qualified actuary**, to set the assumptions, the **qualified actuary** should refer to the disclosure requirements in section 3.4.4 of ASOP No. 41 when preparing the **PBR actuarial report** or a subreport.

Whether required by VM-31 or not, the **qualified actuary** should consider including the verifications referenced in section 3.7 of this ASOP in the **PBR actuarial report**.

4.3 **Additional Disclosures**—The actuary should include the following, as applicable, in the **PBR actuarial report** or any other actuarial communication:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Principle-based reserving for life insurance policies is a new field of endeavor for actuaries, and accepted methods of practice are expected to emerge as experience in the field develops. New developments will arise and be published in practice notes or other types of actuarial literature.

Prior to 1980, the regulation of life insurance statutory reserves was very stable, with only occasional changes in the statutory interest rates and mortality tables. For many years, there were no significant changes in the basic approach. After 1980, interest rate volatility of unprecedented magnitude, as well as the increasing popularity of new policy types that did not fit easily into the existing structure, began to cast doubt on the approach that was being used.

In response to the problem, changes were introduced, including the adoption of dynamic statutory valuation interest rates, the use of cash flow testing of reserves, and a number of adaptations of minimum reserve requirements to provide formulas appropriate for different policy types. It became increasingly difficult to modify the existing structure to keep up with changing conditions.

In addition, the statutory factors for interest and mortality were designed to produce reserves that were high enough to cover a wide variety of situations and thus were viewed as unnecessarily conservative for many companies. It was also evident that some risk factors were not explicitly addressed in the statutory approach, such as the variety of choices open to policyholders (i.e., the items generally grouped under the heading of “policyholder behavior”) and the level and pattern of insurance company expenses. These risk factors have a significant impact on reserve adequacy.

The formulaic nature and prescriptive assumption set of statutory valuation techniques worked well for many years. However, as insurance products increased in complexity, and as new and innovative product designs changed the risk profile of products offered by an insurer, it became apparent that revised regulations and numerous actuarial guidelines were not the best solution for the industry as a whole. On the insurance regulatory side, the National Association of Insurance Commissioners (NAIC), state commissioners, and insurance departments faced the challenge of maintaining the solvency objective of statutory reporting while creating a valuation platform that could be maintained efficiently, enhance uniformity among the states, persist into the future, and remain appropriate for all types of insurance products under various economic conditions.

Thus, there were many reasons for considering the need for radical changes in the statutory reserving system. In many other countries, programs for change had already been under way for

some time. In the United States, the NAIC Model Law 805, *Standard Valuation Law*, was revised in 2009 to provide for a new approach, “principle-based valuation,” under which reserve calculations make use of a company’s own experience, when credible, subject to procedures set forth in a *Valuation Manual*. The phrases “principle-based valuation” and “principle-based reserves” are quite broad and could apply to many different types of reserves.

Committees within the actuarial profession have been developing the detailed regulatory provisions needed to implement principle-based reserving. The Life Practice Council of the American Academy of Actuaries has developed a practice note with respect to principle-based reserving. The need was also recognized for an actuarial standard of practice that would accompany the regulatory effort and would provide additional guidance to the actuary preparing principle-based reserves.

The regulatory structure for principle-based reserves is intended to be consistent with the objectives of statutory financial reporting, which emphasize solvency for the protection of policyholders. In addition to statutory reserves, the insurer is also required to hold additional assets, known as “risk-based capital.” These reserves and risk-based capital are intended to create an adequate margin of safety to ensure that policyholder obligations and other legal obligations will be met when they come due.

While the responsibility for setting methods, models, and assumptions for each group of policies belongs to the company, VM-G of the *Valuation Manual* requires the company to assign to one or more qualified actuaries the responsibility of verifying that the methods, models, and assumptions appropriately reflect the requirements of the *Valuation Manual*. The actuary is expected to perform these responsibilities in a manner consistent with the reserve requirements prescribed in the *Valuation Manual*, keeping in mind that the reserve requirements are intended to support a statutory objective of a conservative valuation. The objective of a conservative valuation is discussed in both the Introduction to the *Valuation Manual* and in section 12 of the *Standard Valuation Law*. The Introduction to the *Valuation Manual* states that the statutory objective of a conservative valuation is to provide protection to policyholders and promote company solvency despite adverse fluctuations in financial conditions or operating results, pursuant to *Standard Valuation Law* requirements. Section 12 of the *Standard Valuation Law* states that the funding associated with the contracts and their risks must incorporate a level of conservatism that reflects conditions, including unfavorable events, that have a reasonable probability of occurring during the lifetime of the contracts.

Current Practices

Since its introduction in the 1980s, cash flow testing has become a well-established technique in most life insurance companies. ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, gives guidance on this technique. The current proposals for principle-based reserve regulations use cash flow testing as a component of the recommended approach.

The adoption of the *Actuarial Opinion and Memorandum Regulation* in 1991, together with ASOP No. 22, *Statement of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*, made it mandatory for companies to use one or more of a set of techniques

(collected under the general heading of “asset adequacy analysis”) in testing for adequacy of reserves in light of the assets supporting them. Foremost among these techniques was cash flow testing. Asset adequacy analysis was designed as an aggregate test to determine whether the insurer should establish reserves in excess of the statutory minimums and includes methods of quantifying this amount. To a degree, these same techniques are paralleled in the determination of certain components of a principle-based valuation.

Product design features introduced since the 1980s have led to a need for additional guidance on how to reserve for products. Model Regulation 830, *Valuation of Life Insurance Policies Model Regulation* (XXX), and Actuarial Guideline 38 (AG 38), *Application of the Valuation of Life Insurance Policies Model Regulation* (AXXX), were developed to address concerns for specific products. Many observers believed these guidelines require reserves that are overly conservative, and a number of companies began using captives to finance these extra reserves. Recent changes to AG 38 and the introduction and subsequent revision of Actuarial Guideline 48, *Actuarial Opinion and Memorandum Requirements for the Reinsurance of Policies Required to be Valued under Sections 6 and 7 of the NAIC Valuation of Life Insurance Policies Model Regulation* (AG 48) and the introduction of Model Regulation 787, *Term and Universal Life Insurance Reserve Financing Model Regulation (Reserve Financing Regulation)*, which deal with captive financing arrangements, have caused many companies to model their assets and reserves, rather than following a formulaic tabular approach. For 2015 and 2016 valuations, actuaries have been using methods from the *Valuation Manual* as part of the calculations required by AG 38 and AG 48. AG 48 and the Reserve Financing Regulation specifically reference VM-20.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this proposed ASOP, *Principle-Based Reserves for Life Products under the NAIC Valuation Manual*, was issued in March 2017 with a comment deadline of May 31, 2017. Fourteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Principle-Based Reserve Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term “reviewers” in appendix 2 includes the Principle-Based Reserves Task Force, the Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

GENERAL COMMENTS	
Comment	Several commentators said that the draft ASOP repeats too much of the Valuation Manual, and much of the text could be deleted.
Response	The reviewers considered these comments and made changes. In many places, the reviewers believe much of the overlap is necessary to set the stage for guidance.
Comment	One commentator said that the use of “should consider” within the ASOP gives the actuary “an overly easy out.”
Response	The ASB is deliberate regarding the use of different terms of construction. The reviewers note that ASOP No. 1, <i>Introductory Standard of Practice</i> , indicates that the phrase “should consider” denotes action. ASOP No. 1 goes on to say, “If, after consideration, in the actuary’s professional judgment an action is not appropriate, the action is not required and failure to take this action is not a deviation from the guidance in the standard.” The reviewers believe the use of “should consider” is appropriate in the places it is used in this ASOP, and therefore made no change.
Comment	One commentator noted that the <i>Valuation Manual</i> is expected to be revised frequently, and that direct quotes may soon become outdated.
Response	The reviewers agree and removed direct quotes.
Comment	One commentator asked whether the ASOP could clarify whether Actuarial Guidelines apply to PBR.
Response	The reviewers note that VM-20 section 3.A.2 requires the application of VM-A and VM-C, which includes the Actuarial Guidelines. Therefore, the reviewers made no change.

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Comment	One commentator noted overlap between the draft ASOP and the practice note on PBR.
Response	The reviewers note that practice notes and ASOPs may cover the same issues but serve different purposes, and therefore made no change.
Comment	One commentator suggested changing the title to <i>Principle-Based Reserves for Life Products under VM-20</i> .
Response	The reviewers agree with the suggestion and changed the title to <i>Principle-Based Reserves for Life Products under the NAIC Valuation Manual</i> .
Comment	One commentator suggested having a separate section to address simplifications, approximations, and model efficiency techniques as allowed under VM-20 Section 2.G.
Response	The reviewers chose not to restructure the ASOP, but did update individual sections.
Comment	Several commentators questioned whether this ASOP is necessary.
Response	The reviewers believe that the guidance provided in this ASOP is a necessary addition to actuarial standards.
TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: Is the guidance concerning VM-G clear and appropriate (section 3.1)?	
Comment	Most commentators said the guidance was clear and appropriate.
Comment	One commentator suggested moving the last paragraph of section 3.1, Regulatory Requirements, into section 1.2, Scope.
Response	The reviewers agree and moved the paragraph.
Question 2: Is the guidance concerning the PBR Actuarial Report clear and appropriate (section 4.2)?	
Comment	One commentator suggested adding “qualified” before “actuary” in section 4.2.
Response	The reviewers agree and made the change.
Question 3: Are there any significant inconsistencies between the requirements of this draft ASOP and the requirements of the <i>Valuation Manual</i>?	
Comment	Several respondents said there were no significant inconsistencies. The rest noted specific inconsistencies.
Response	The reviewers moved comments about inconsistencies to the appropriate section and addressed them there.
Question 4: Does the proposed effective date of December 31, 2017 provide sufficient time to comply with this standard if the ASB adopts the standard in September 2017?	
Comment	Three respondents said yes; two expressed concern that companies would not have enough time to comply with the ASOP.
Response	Given that companies could be calculating reserves under VM-20 by December 31, 2017, and limited concerns regarding the effective date, the ASB set December 31, 2017 as the ASOP’s effective date.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested that the ASOP specify whether the ASOP applied to group or individual products.

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Response	The reviewers prefer to keep the general reference to life products, as the guidance should apply to both individual and group products. The reviewers removed the word “individual” in sections 1.2 and 3.1. The actuary should refer to the <i>Valuation Manual</i> for applicability.
Comment	One commentator said it was unclear whether the ASOP pertains to quarterly valuations or only the annual filing.
Response	The reviewers note this standard applies to actuaries when performing actuarial services in connection with the calculation or review of reserves for life insurance policies subject to VM-20.
SECTION 2. DEFINITIONS	
Comment	Several commentators said that definitions in the <i>Valuation Manual</i> and the ASOP should be consistent.
Response	The reviewers agree that terms defined in the ASOP should conform to those in the <i>Valuation Manual</i> and noted such in the introduction to section 2. The reviewers also updated the definitions to conform to those in the <i>Valuation Manual</i> .
Section 2.6, Granularity (now section 2.5)	
Comment	One commentator asked why the definition of granularity was inconsistent with the proposed <i>Modeling ASOP</i> . Another commentator suggested language to streamline the definition.
Response	The reviewers made changes to make the definition more consistent with the definition in the proposed <i>Modeling ASOP</i> .
Section 2.13, Principle-based Reserve (now section 2.12)	
Comment	One commentator suggested that a clarification was needed if the reference to <i>Standard Valuation Law</i> was intended to mean the standard valuation law of the state of domicile, as opposed to the NAIC model <i>Standard Valuation Law</i> .
Response	The intended reference was to the NAIC model <i>Standard Valuation Law</i> (see section 1.1). The reviewers therefore revised the definition to clarify this.
Section 2.16, Relevant Experience (now section 2.15)	
Comment	One commentator asked why the definition of relevant experience was inconsistent with the definition in ASOP No. 25, <i>Credibility Procedures</i> .
Response	The reviewers note that the definition of relevant experience in ASOP No. 25 used another term neither defined in nor used in this ASOP and chose not to use the definition in ASOP No. 25.
Section 2.19, Sensitivity Testing (now section 2.18)	
Comment	One commentator suggested that the definition of sensitivity testing refer to one or more assumptions rather than a single assumption.
Response	The reviewers agree and made the change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	One commentator suggested that the ASOP more closely align with the VM-20 language requiring that model simplifications and scenario reductions both not materially differ from and not result in a less conservative reserve than a directly calculated value.
Response	The reviewers agree and made changes throughout section 3 of the ASOP to bring the language into line with section 2 of VM-20.

Section 3.2, Minimum Net Premium Reserve (deleted)	
Comment	One commentator suggested removing the section on Net Premium Reserve because it offered no guidance.
Response	The reviewers agree and removed the section.
Section 3.3.1, Grouping (now section 3.2.1)	
Comment	Two commentators suggested wording changes to the section on grouping for exclusion tests.
Response	The reviewers agree and made the changes.
Section 3.3.2, Certification (now section 3.2.2)	
Comment	One commentator suggested having another section discussing actuarial demonstration for the stochastic exclusion test.
Response	The reviewers believe that section 6 of VM-20 provides sufficient guidance and made no change.
Comment	One commentator suggested eliminating some of the discussion taken directly from VM-20 of when and how a certification by a qualified actuary could be used to satisfy the stochastic exclusion test.
Response	The reviewers disagree and believe the language in the ASOP from VM-20 provides the context for the guidance. Therefore, reviewers made no change.
Section 3.3.2(a) (now section 3.2.2[a])	
Comment	One commentator suggested that the requirement to consider the impact on reserves of future material interest rate or asset return volatility risk leads the reader to believe that this is not a concern now.
Response	The reviewers believe the guidance is clear and made no change.
Section 3.3.2(b) (now section 3.2.2[b])	
Comment	One commentator suggested clarifying the guidance around certification to satisfy the stochastic exclusion test.
Response	The reviewers clarified the language.
Section 3.4.1, Modeling (now section 3.3, Modeling Stochastic and Deterministic Reserves)	
Comment	One commentator suggested that multiple references to minimum reserves in section 3.4 were not correct and should have been references to deterministic or stochastic reserves.
Response	The reviewers agree and changed the references to deterministic reserves or stochastic reserves. In addition, the reviewers changed the text with respect to overall margin (now section 3.3.2[f][4]) to clarify the intent of the ASOP.
Comment	Two commentators thought that the reference to the cost of shareholder dividends could be confused with policyholder dividends or dividends on assets.
Response	The reviewers disagree and made no change.
Section 3.4.1(a), (Cash Flow Model) (now combined with section 3.3.1, Model Segments)	
Comment	One commentator said that the text in 3.4(a)(1) was a restatement of VM-20.
Response	The reviewers agree and deleted some of the text that restated VM-20.

Comment	One commentator thought that certain references in the text could be deleted because the items were included in the definition of Asset Segmentation Plan in the ASOP.
Response	The reviewers note that the subject text appears in VM-20 and is necessary to set the context for the guidance, and did not make changes to this section of the ASOP. The reviewers deleted the definition of Asset Segmentation Plan as it is not needed.
Comment	One commentator suggested that the requirement to perform projections until no obligations remain was too stringent.
Response	The reviewers note that the subject text is a direct quote from VM-20. However, in clarifying another section of the ASOP, the reviewers deleted the reference to this requirement.
Section 3.4.1(b), Model Segments (now combined with section 3.3.1, Model Segments)	
Comment	One commentator suggested the reference to “asset earned rates” should be a reference to “net asset earned rate.”
Response	The reviewers agree and made the change.
Comment	One commentator thought the ASOP might introduce an unintended restriction not in VM-20 to have separate segments for separate asset portfolios.
Response	The reviewers modified the language to clarify the intent.
Section 3.4.1(c), Model Validation (now section 3.3.1.2)	
Comment	One commentator was concerned about the level of review required for recent model updates.
Response	The reviewers modified the language to clarify the intent.
Comment	One commentator thought the ASOP should be more specific with respect to how a dynamic validation should be constructed.
Response	The reviewers believe the specifics of the dynamic validation may vary depending on the block and modeling system and made no changes to the text.
Comment	One commentator thought that the actuary should be required to review a static valuation of inforce values, and the ASOP did not require such review, but rather required the actuary to consider a static validation.
Response	The reviewers agree and modified the language accordingly.
Section 3.4.1(d)(1) (Liability Modeling Considerations) (now section 3.3.3[a])	
Comment	Two commentators thought the language allowing the actuary to use demonstrations of the impact of liability grouping done as of a date other than the valuation date was too lenient.
Response	The reviewers agree and modified the language to bring it into line with section 2 of VM-20.
Comment	One commentator suggested that the phrase “prior as of date” was unclear.
Response	The reviewers agree and modified the language to bring it into line with section 2 of VM-20.
Section 3.4.1(d)2 (Liability Modeling Considerations) (now section 3.3.3[b])	
Comment	One commentator thought that this section did not provide guidance beyond what is provided in VM-20 and VM-31 and that the examples covered some but not all of the situations that are included in the <i>Valuation Manual</i> .
Response	The reviewers believe the ASOP provides additional guidance beyond the text of VM-20 and VM-31, and therefore did not make these changes.

Section 3.4.1(e), Use of Prior Period Data (now section 3.3.4)	
Comment	One commentator suggested that the phrase “prior as of date” was unclear.
Response	The reviewers agree and made changes to the text.
Comment	One commentator suggested eliminating the first two paragraphs of this section that paraphrase VM-31 D.11.g.
Response	The reviewers believe that it is preferable to give the regulatory context in which the guidance is offered. Therefore, the reviewers made no change in response to this comment.
Section 3.4.2, Assumptions (now section 3.4, Assumptions for Stochastic and Deterministic Reserves)	
Comment	One commentator suggested reference to the draft ASOP on Assumptions.
Response	The reviewers note that ASOPs do not include references to draft standards, and therefore made no change.
Comment	One commentator suggested clarifying the use of sensitivity tests during the assumption setting process.
Response	The reviewers agree and clarified the language.
Section 3.4.2(a), Mortality (now section 3.4.1)	
Comment	Several commentators suggested clarifying the language around mortality trends.
Response	The reviewers agree and clarified the language.
Comment	Two commentators recommended that lack of a mortality improvement assumption be labelled as an implicit margin.
Response	The reviewers clarified the reference to implicit margins.
Section 3.4.2(b), Investment Experience (now section 3.4.2)	
Comment	Two commentators pointed out that a reference was missing to the alternative investment strategy mentioned in VM-20 section 7.
Response	The reviewers added the following sentence: “The actuary should comply with the requirement in section 7 of VM-20 that the modeled reserve is not less than the reserve that would have been obtained by the alternative investment strategy.”
Section 3.4.2(c)(1)(vi) (Policyholder Behavior) (now section 3.4.3[a][6])	
Comment	One commentator pointed out redundancy in the guidance on scenario-dependent assumptions for policyholder behavior.
Response	The reviewers modified the language to address the commentator’s concern.
Section 3.4.2(c)(2), Premium Assumptions (now section 3.4.3[b], Premium Payment Assumptions)	
Comment	Two commentators suggested that language around premium patterns be clarified.
Response	The reviewers agree and revised the paragraph.
Section 3.4.2(d)(2), Applying Recent Expense Experience (now section 3.4.4[b])	
Comment	One commentator suggested new language for consideration of unusual expenditures.
Response	The reviewers disagree and made no change.

Section 3.4.2(e), Taxes (now section 3.4.5)	
Comment	One commentator suggested removing the section on taxes because it duplicates VM-20.
Response	The reviewers believe the language included in the ASOP provides clarity, and therefore made no change in response to this comment.
Comment	One commentator pointed out that both Federal and foreign income taxes should be excluded from reserve calculations.
Response	The reviewers agree and revised the language.
Section 3.4.2(f), Determining Assumption Margins (now section 3.4.6)	
Comment	One commentator pointed out that nonguaranteed elements are not assumptions, but management decisions, and asked for clarification on how to apply margins to this assumption.
Response	The reviewers excluded nonguaranteed elements from the example in response to this comment.
Comment	One commentator pointed out that although mortality assumptions are highly prescribed, some of the ASOP guidance for other assumptions could be applied to the mortality assumption, and asked that language be changed to apply the guidance to the mortality assumption.
Response	The reviewers agree and changed the language in 3.4.2(f)(1) to clarify that the guidance applies to nonprescribed mortality margins.
Section 3.4.2(f)(2), Establishing Margins (now section 3.4.6[b])	
Comment	One commentator suggested that the ASOP reference the VM-31 requirement of estimating an aggregate margin in the deterministic reserves.
Response	The reviewers agree and added a sentence to this effect to section 3.4.2(f)(4) (now 3.3.2[f][4]).
Section 3.4.2(f)(3), Sensitivity Testing (now section 3.4.6[c])	
Comment	One commentator objected to the term “relatively insignificant” as applied to margins.
Response	The reviewers revised the language to “non-material impact.”
Section 3.5.1, Stochastic and Deterministic Reserves Under Reinsurance (now Stochastic and Deterministic Reserves Net of Reinsurance)	
Comment	One commentator suggested that the ASOP more closely align with the VM-20 language regarding model simplifications and scenario reductions.
Response	The reviewers agree and made changes to bring the language into line with section 2 of VM-20.
Section 3.5.2, Pre-Reinsurance-Ceded Minimum Reserve	
Comment	One commentator suggested that the term “net premium reserve” be replaced by the defined term “minimum net premium reserve” in section 3.5.2.
Response	The reviewers deleted the definition and revised the language to be consistent with VM-20.
Comment	One commentator requested clarification of when a hypothetical portfolio would be required.
Response	The reviewers revised the language to clarify when a hypothetical portfolio is required.
Section 3.5.3, Credit for Reinsurance Ceded	
Comment	One commentator suggested a revision to language around credit for reinsurance.
Response	The reviewers agree and made this change.

Section 3.7, Documentation	
Comment	One commentator suggested streamlining the language around verification.
Response	The reviewers agree and modified the language.
Comment	One commentator believed that verification that methods, models, assumptions, and controls meet the standards of the <i>Valuation Manual</i> is part of a company's internal control process, and should not be included in the PBR report.
Response	The reviewers note that the verifications are required by VM-G, but modified the language to take the commentator's concerns into account.
Section 4, Communications and Disclosures	
Comment	One commentator suggested that the qualified actuaries' responsibilities spelled out in VM-G be detailed in the ASOP.
Response	The reviewers do not believe it is necessary to repeat this portion of the <i>Valuation Manual</i> and therefore made no change.
Section 4.2, PBR Actuarial Report	
Comment	One commentator said the language around using the work of the appointed actuary for the stochastic exclusion test was not strict enough, since the appointed actuary is not required to do cash flow testing.
Response	The reviewers moved the guidance from section 4.2 to section 3.3.2 (now section 3.2.2, Certification), and added language to say, “the actuary may rely upon an analysis performed for a different purpose that uses a set of scenarios which, based on the actuary’s professional judgement, adequately captures the interest rate or asset return volatility risk.”



**Actuarial Standard
of Practice
No. 53**

**Estimating Future Costs for Prospective
Property/Casualty Risk Transfer and Risk Retention**

**Developed by the
Ratemaking Task Force of the
Casualty Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2017**

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December 2017

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*

This document contains ASOP No. 53, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*.

Background

Estimating future costs for prospective property/casualty risk transfer and risk retention has been a fundamental part of actuarial practice since the beginning of the profession. Estimating future costs based on sound actuarial practice is essential to the integrity of the insurance and risk financing system and is key to fulfilling the promises embodied in insurance contracts. The board of directors of the Casualty Actuarial Society (CAS) adopted the *Statement of Principles Regarding Property and Casualty Ratemaking (Statement of Principles)* in May 1988 (before the ASB was established). This document featured four fundamental principles of ratemaking and also discussed additional considerations. In 2009, the CAS requested that the ASB develop an actuarial standard of practice in the area of property/casualty ratemaking. In its request, the CAS noted that the *Statement of Principles* contained considerations that might be expanded to become the basis of an ASOP.

Ratemaking has become much more complex and sophisticated since the CAS *Statement of Principles* was adopted. In crafting this ASOP and responding to comments from its initial exposures, the ASB quickly realized that there are significant differences of opinion within the profession regarding certain aspects of ratemaking, including pricing, price optimization methodologies, and rate filing requirements, that would need to be reconciled before a comprehensive standard of practice on ratemaking could be developed. Therefore, to create a standard of practice for the core aspects of ratemaking that could be issued in a reasonable amount of time, the ASB has chosen to develop this ASOP to pertain solely to the development or review of future cost estimates for prospective property/casualty risk transfer and risk retention. It should be noted, however, that upon completion of this proposed ASOP, the ASB will give consideration to the development of a standard of practice on rate filings in an attempt to address the various issues within rate regulatory discussions today (for example, price optimization, unfair discrimination, and the Principles contained in the current CAS *Statement of Principles*).

It should be noted that this ASOP incorporates all of the Considerations contained in the CAS *Statement of Principles* and addresses issues related to the estimation of costs for risk transfer

and risk retention not currently addressed in existing ASOPs. This ASOP also references other existing ASOPs that include relevant issues related to the estimation of future costs for prospective risk transfer and risk retention.

First Exposure Draft

In September 2014, the ASB approved a first exposure draft with a comment deadline of January 31, 2015. Twenty-two comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

In December 2015, the ASB approved a second exposure draft with a comment deadline of April 30, 2016. Eighteen comment letters were received and considered in making changes that were reflected in the third exposure draft.

Third Exposure Draft

In December 2016, the ASB approved a third exposure draft with a comment deadline of April 30, 2017. Thirteen comment letters were received and considered in making changes that are reflected in this ASOP. As a result of the comment letters, the ASB made changes, including the following: (1) modified the title of the ASOP to *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention*; (2) limited the disclosure of assumptions to material assumptions; (3) clarified the guidance for the treatment of unusual events, while changing the designation to be infrequent events; and (4) clarified the guidance for intended measure. For a summary of issues contained in these comment letters, please see appendix 2. In addition, the ASB took editorial suggestions where they improved the document.

The ASB thanks everyone who took the time to contribute comments and suggestions on each of the exposure drafts.

The ASB voted in December 2017 to adopt this standard of practice.

ASOP No. 53—Doc. No. 190

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE

**ESTIMATING FUTURE COSTS FOR PROSPECTIVE
PROPERTY/CASUALTY RISK TRANSFER AND RISK RETENTION**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to developing or reviewing future cost estimates for prospective property/casualty **risk transfer** and **risk retention**. This includes future cost estimates for insurance, reinsurance, self-insurance, loss portfolio transfers, or any other mechanisms for **risk transfer** or **risk retention**.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to developing or reviewing future cost estimates (commonly known as actuarial indications) for prospective property/casualty **risk transfer** and **risk retention**. For example, this standard applies when actuaries are developing future cost estimates underlying product prices, estimating funding requirements for self-insured programs and captives, and developing reinsurance prices.

As estimates are often made for separate elements of the cost of **risk transfer** and **risk retention** (for example, loss and loss adjustment expenses, operational and administrative expenses, the cost of reinsurance, and the cost of capital) and subsequently summed to a total cost estimate, this standard applies to the separate elements as well as the total. If the actuary's role relates to any of the elements of the future cost estimate, the guidance in this standard applies only to the actuarial services related to those elements. If the actuary's actuarial services involve reviewing future cost estimates developed by another party, the actuary should use the guidance in section 3 to the extent practicable. This standard also applies to developing or reviewing the future cost estimates by class within a risk classification system.

Actuarial services involved in developing or reviewing estimates of future costs may include actuarial communications, expert testimony, regulatory activities, legislative activities, or statements concerning public policy to the extent these activities involve providing an opinion on property/casualty future cost estimates.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated

document differs materially from the originally referenced document, the actuary should consider the guidance in the referenced standard as amended or restated to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard is effective for work performed on or after August 1, 2018.

Section 2. Definitions

The terms below are defined for use in this standard.

- 2.1 **Coverage**—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation to pay benefits, expenses, or claims associated with contingent events.
- 2.2 **Exposure Base**—A basic unit that is used to measure the future cost of **risk transfer** and **risk retention**. This unit can vary by element of cost.
- 2.3 **Method**—A systematic procedure for developing, reviewing, or revising future cost estimates or elements thereof.
- 2.4 **Model**—A simplified representation of relationships among real world variables, entities, or events using statistical, financial, economic, mathematical, or scientific concepts and equations.
- 2.5 **Risk Retention**—A risk-management and risk-control strategy for the assessment, management, or financing of retained risk associated with the specific **coverage**. Examples of **risk retention** include self-insurance and certain types of single parent captives.
- 2.6 **Risk Transfer**—A risk-management and risk-control strategy, involving legally binding agreements, that shifts responsibility from one party to another or indemnifies one party by another party for the financial obligations associated with the **coverage**. Examples of **risk transfer** include insurance, reinsurance, and loss portfolio transfers.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Future Cost Estimate**—The actuary should determine the elements that are appropriate to include in the future cost estimate. Such elements should relate to the applicable **coverage** and include loss and loss adjustment expenses, operational and administrative expenses, the cost of reinsurance, and the cost of capital.
- 3.2 **Intended Measure**—The actuary should determine the intended measure of the future cost estimate based on the purpose or use of the estimate. The intended measure may vary for

each element of the future cost estimate as needed and appropriate. Intended measures will be affected by the desires or needs of the principal, legal requirements, and the regulatory environments in which the future cost estimate will be used.

Examples of intended measures include the mean, the mean plus risk margin, the high or low estimate within a range of reasonably possible outcomes, and a specified percentile of the distribution of reasonably possible outcomes. There are instances in which other measures may be appropriate based upon the purpose or use of the estimate.

- 3.3 **Organization of Data**—The actuary should determine what data are available and appropriate for estimating future costs. Based on what data are available and appropriate, the actuary should determine how the data will be organized to develop or review the future cost estimate or any element of the future cost estimate.

The actuary should consider the level of data aggregation that the actuary believes is appropriate for the types of cost estimation analyses to be undertaken. Examples of aggregation **methods** include aggregating by accident period, calendar period, policy period, and report period. The nature of the **coverage**, the element of the future cost being estimated, and the type of analysis will influence the actuary's selection of the level of data aggregation.

The actuary also should consider segmenting the data if the actuary believes it will improve the cost estimation analysis, subject to credibility considerations (see section 3.11). Examples of data segmentation include segmenting the data by **coverage**, risk class, or risk characteristic. Segmenting the data to more refined levels may be appropriate for estimating future costs within a risk classification system.

- 3.4 **Data Quality**—The actuary should refer to ASOP No. 23, *Data Quality*, for guidance in the consideration of the choice and use of data for estimating future costs.
- 3.5 **Methods, Models, and Assumptions**—The actuary should select appropriate **methods** or **models** consistent with the intended measure for each element of the future cost. The actuary should use reasonable assumptions (including parameters) appropriate to each **method** or **model**. Assumptions may be implicit or explicit and may involve interpreting available experience, projecting future experience, or adjusting for changes in conditions affecting the available experience. The actuary should use **methods** or **models**, along with reasonable assumptions, that, in the actuary's professional judgment, have no known significant bias in the aggregate relative to the intended measure. When using **models**, the actuary should refer to ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*.
- 3.6 **Exposure Base**—If selecting a new **exposure base** or changing an existing **exposure base**, the actuary should select an **exposure base** that bears a strong relationship to the cost of **risk transfer** or **risk retention** and is practical. Characteristics of a practical **exposure base** may include that the **exposure base** is objectively measurable and easily verifiable.

Some mechanisms for implementing **risk transfer** and **risk retention** may use multiple **exposure bases**, with different **exposure bases** applying to different aspects of **coverage** provided (for example, sales revenue for general liability, amount of insurance for commercial property). In undertaking analyses for these mechanisms, it may be appropriate to select one **exposure base**, referred to as the composite **exposure base**, to act as a proxy for the more refined **coverage-by-coverage exposure bases**.

- 3.7 **Risk Classification System**—Risk classification systems can be an integral part of the development of future cost estimates for prospective property/casualty **risk transfer** and **risk retention**. The actuary should refer to ASOP No. 12, *Risk Classification (for All Practice Areas)*, for guidance in designing, reviewing, or changing a risk classification system.
- 3.8 **Use of Historical Data**—The actuary should determine the extent to which historical data (premium, exposure, loss, and loss adjustment) are available and appropriate for estimating future costs. For example, the data should be consistent with insurance policy provisions or risk-management and risk-control strategies of the applicable insurance, reinsurance, self-insurance, loss portfolio transfers, or any other mechanisms for **risk transfer** or **risk retention**.
 - 3.8.1 **Use of Historical Exposure and Premium Data**—If the actuary is using historical exposure and premium data, the actuary should consider adjusting the data to reflect a consistent measurement of the historical exposures and rate level, if applicable. These considerations include adjusting historical data to a common exposure level and adjusting premium data for historical changes in the way premium charges are calculated, including both changes to manual rates and the impact of any individual risk rating plans, if applicable. If the actuary is adjusting historical exposure and premium data, the actuary should consider changes during and after the historical period and should select an appropriate **method** for adjustments that is consistent with the nature of the available data, the intended measure, and the purpose of the analysis.
 - 3.8.2 **Use of Historical Loss and Loss Adjustment Expenses**—The actuary should determine the extent to which historical loss and loss adjustment expenses are available and appropriate as a basis for estimating future costs. In estimating future costs related to loss and loss adjustment expenses, the actuary should consider adjusting historical data using **methods** or **models**, along with reasonable assumptions, that, in the actuary's professional judgment, reflect the ultimate value of the loss and loss adjustment expenses. The actuary also should consider the following:
 - a. the **coverage** being evaluated;
 - b. the type of analysis (such as overall future cost level analysis or risk classification analysis); and

- c. the differences between the future period and the historical conditions under which the historical claims occurred, the claims were adjusted, and the claim reserves were set.

The actuary should consider whether the analysis of loss adjustment expense data requires different **methods**, **models**, or assumptions than the analysis of loss data. Additionally, the actuary should consider whether different **coverages** within a line of business may require different **methods**, **models**, or assumptions.

- 3.8.3 **Trends**—The actuary should consider past and prospective changes in claim costs, claim frequencies, exposures, and premiums. The actuary should refer to ASOP No. 13, *Trending Procedures in Property/Casualty Insurance*, for guidance in the selection of trends for estimating future values of costs associated with the elements that make up the future cost estimate.
- 3.8.4 **Additional Adjustments to Historical Data**—The actuary should consider whether additional adjustments to the historical data are needed to reflect the environment expected to exist in the period for which the future costs are being estimated. If the actuary makes adjustments, these adjustments should be made so that the historical data are stated and used on a consistent basis. Examples of changes that may suggest the need for adjustments include the following:
 - a. judicial, legislative, or regulatory changes;
 - b. mix of business changes;
 - c. policy contract changes;
 - d. claim practice or reserving changes;
 - e. operational changes;
 - f. accounting changes; and
 - g. reinsurance changes.
- 3.9 **Expenses**—Some types of expenses may require different treatment for future cost estimates than other types of expenses. The actuary should refer to ASOP No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*, and ASOP No. 13 for guidance in estimating future expenses.
- 3.10 **New Coverages or Exposures**—If the actuary is estimating the future cost for a new **coverage** or exposure, and the historical loss and loss adjustment expenses are either unavailable, limited, or not fully representative of the new **coverage** or exposure, the

actuary should consider the following in selecting data and developing **methods, models**, or assumptions for use in estimating the future costs:

- a. data from **coverages** or exposures that are similar to the new **coverage** or exposure;
 - b. data on the phenomenon or events that are contemplated by the new **coverage** or exposure;
 - c. differences between **coverages** or exposures with available relevant data and the new **coverage** or exposure; and
 - d. appropriate adjustments to the available relevant data to reflect expected differences identified in section 3.10(c).
- 3.11 **Credibility**—The actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance in considering the credibility given to a particular set of data and the selection of the relevant experience used to supplement the data, which is often referred to as the complement of credibility.
- 3.12 **Treatment of Catastrophes**—The actuary should refer to ASOP No. 38 and ASOP No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*, for guidance in the consideration of catastrophes.
- 3.13 **Treatment of Infrequent Events**—The actuary should consider whether it is necessary to use **methods** that adjust for either the presence or absence of infrequent large losses in the historical data set. For example, some data sets may require using a longer experience period to calculate an appropriate provision for large losses. Similarly, when estimating expected losses in higher layers that contain infrequent losses, different **methods** may be appropriate. In some cases, the **methods** used to deal with catastrophe losses may be applicable and the actuary should refer to ASOP No. 39.
- 3.14 **Reinsurance**—When the cost of reinsurance is reflected in future cost estimates, the actuary should select appropriate **methods** or **models**, along with reasonable assumptions, for estimating the cost associated with reinsurance arrangements expected to apply during the period for which the future costs are being estimated. If the cost of reinsurance is treated as an expense, the actuary should refer to ASOP No. 29 for additional guidance.
- 3.15 **Profit and Contingency Provisions and the Cost of Capital**—The actuary should refer to ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*, for guidance in the consideration of the profit and contingency provisions and the cost of capital.
- 3.16 **Additional Funding Sources**—In some mechanisms for **risk transfer**, income may come from other sources, such as assessments paid by policyholders or other parties including

insurers, a group of insurance purchasers, or taxpayers. The actuary should consider additional sources of funding and their allocation and timing when estimating future costs.

Section 4. Communications and Disclosures

- 4.1 **Actuarial Communications**—When issuing actuarial communications under this standard, the actuary should refer to ASOP Nos. 12, 13, 23, 25, 29, 30, 38, 39, and 41, *Actuarial Communications*. In addition, the actuary should disclose the following in an appropriate actuarial communication:
- a. the elements included in the future cost estimates (see section 3.1);
 - b. the intended measure used in developing or reviewing the future cost estimates (see section 3.2);
 - c. the **methods** or **models** used in developing or reviewing the future cost estimates (see section 3.5); and
 - d. the material assumptions made by the actuary and used in developing or reviewing the future cost estimates (see section 3.5).
- 4.2 **Disclosures**—The actuary should also include the following in an actuarial communication, if and when applicable:
- a. if appropriate data are available for the analysis, the actuary should disclose the data organization (level of data aggregation and, if considered, segmentation) used for each element (see section 3.3);
 - b. if the actuary selects a new **exposure base** or changes an existing **exposure base**, the actuary should disclose the new or revised **exposure base** (see section 3.6);
 - c. if the actuary uses historical data, the actuary should disclose any adjustments made to the historical data to account for expected differences between the historical data and future experience (see sections 3.8 and 3.10). For adjustments made to address issues of data quality, refer to ASOP No. 23;
 - d. if the actuary estimates future costs for a **coverage** or exposure when the historical data are unavailable, limited, or not fully representative, the actuary should disclose the data used and any appropriate adjustments made to the data (see sections 3.8.4 and 3.10);
 - e. when the cost of reinsurance is reflected in future cost estimates, the actuary should disclose the **methods** or **models**, along with the material assumptions, used in estimating the costs of reinsurance (see section 3.14);

- f. if the actuary considers additional sources of funding, the actuary should disclose how the funding was reflected in estimating the future cost (see section 3.16);
- g. the disclosure in ASOP No. 41, section 4.2, if any material assumption or **method** was prescribed by applicable law;
- h. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or **method** selected by a party other than the actuary; and
- i. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Cost estimation, ratemaking, and risk retention have been a fundamental part of actuarial practice since the beginning of the profession. A critical piece of these professional activities is the estimation of future costs.

Ratemaking principles and standards of practice are important to protect the soundness of the system, permit economic incentives to operate, and thereby encourage widespread availability of coverage. The board of directors of the Casualty Actuarial Society (CAS) adopted the *Statement of Principles Regarding Property and Casualty Ratemaking* in May 1988. The *Statement of Principles* has served as a foundational source of information regarding future cost estimation and ratemaking, providing both principles and considerations. Several actuarial standards of practice (ASOPs) issued by the Actuarial Standards Board are also important in future cost estimation, including the following:

- ASOP No. 12, *Risk Classification (for All Practice Areas)*;
- ASOP No. 13, *Trending Procedures in Property/Casualty Insurance*;
- ASOP No. 23, *Data Quality*;
- ASOP No. 25, *Credibility Procedures*;
- ASOP No. 29, *Expense Provisions in Property/Casualty Insurance Ratemaking*;
- ASOP No. 30, *Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking*;
- ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*;
- ASOP No. 39, *Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking*; and
- ASOP No. 41, *Actuarial Communications*.

Current Practices

Over the years, a multitude of methods and models for the estimation of future costs have been designed, put into use, and modified as a result of experience. Materials and publications of the CAS such as the *Syllabus of Basic Education* (formerly the *Syllabus of Examinations*), *Variance, Proceedings* (discontinued in 2014), *Foundations of Casualty Actuarial Science*, Ratemaking and Ratemaking/Product Management Seminar archives, and others provide discussions of current practices. While these may provide useful educational guidance to practicing actuaries, none is an actuarial standard of practice.

Throughout our history as a profession, actuarial future cost estimates have not always been the sole basis for rates and prices in risk-transfer or risk-retention transactions. For example, other important influences may include regulatory requirements and business objectives. Such other influences may support or compete with actuarial future cost estimates in deciding upon final rates and prices.

The increased availability of data and advances in technology, tools, techniques, and learnings from other disciplines have resulted in continued evolution of methods and models for the estimation of future costs. Innovation and use of new data and technologies will continue.

Appendix 2

Comments on the Third Exposure Draft and Responses

The third exposure draft of this ASOP, *Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Funding* (previously *Property/Casualty Ratemaking*), was issued in December 2016 with a comment deadline of April 30, 2017. Thirteen comment letters were received, some of which were submitted on behalf of multiple commentators, such as firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Ratemaking Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Casualty Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term “reviewers” in appendix 2 includes the Ratemaking Task Force, the Casualty Committee, and the ASB. Unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the third exposure draft.

TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: Does the proposed ASOP provide sufficient and appropriate guidance to actuaries estimating future costs for prospective property/casualty risk transfer and risk funding?	
Comment	Six commentators agreed that the proposed ASOP provided sufficient guidance.
Question 2: The proposed ASOP has added reference to “intended measure” for the estimation of all future costs to eliminate any implication that the only appropriate estimate of all future costs was an expected value without any consideration of potential variability. Is it clear what is meant by “intended measure”?	
Comment	One commentator suggested that the section does not recognize the instances where elements of the future cost estimates have different intended measures, whereas other sections do (for example, section 3.5).
Response	The reviewers agree and made the suggested change.
Comment	One commentator suggested that the reference in this section to the appropriate consideration of potential variability, versus expected value, is too limiting. The commentator said that the benefit and value of the ASOP’s use of “intended measure” for actuarial cost estimates is to recognize that a number of key considerations can affect the basis for such estimates. The commentator also noted that such considerations for the intended measure might include adjustments for large infrequent losses, catastrophic losses, paucity of relevant data, data credibility issues, etc.
Response	The reviewers modified section 3.14 (now section 3.13) to provide guidance to actuaries when dealing with infrequent events and associated data issues.
Question 3: Are the definitions of “risk transfer” and “risk funding” in the proposed ASOP complete from the perspective of all activities in which an actuary is involved when estimating future costs for prospective property/casualty risk transfer and risk funding?	
Comment	Two commentators agree that the definitions are sufficient and clear.

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Comment	Several commentators suggested that the phrase “risk funding” may be confusing or misleading, and two commentators suggested replacing “risk funding” with “risk retention.”
Response	The reviewers agree that the phrase “risk funding” could be misinterpreted and changed it to “risk retention.”
Comment	One commentator suggested clarifying that the scope of the ASOP broadly includes estimating revenue/funding associated with risk transfer contracts, not just the estimation of future costs.
Response	The reviewers agree that the use of the word “funding” in the two cases may be confusing and clarified the language of the scope to “developing or reviewing future cost estimates...for prospective property/casualty risk transfer and risk retention.”
Comment	One commentator suggested deleting “contractual” from the definition of risk transfer, as this would make the definition more consistent with the definition of “coverage.”
Response	The reviewers agree and made the suggested change.
Question 4: Is it clear that this proposed ASOP provides guidance only for the estimation of future costs for prospective property/casualty risk transfer and risk funding? Is it clear that the scope does not include items such as the balancing and interaction of potentially competing objectives related to regulation, business objectives, and actuarial cost estimates?	
Comment	Four commentators stated that the scope of the proposed ASOP was clear.
Comment	One commentator said that the proposed ASOP was not completely clear with regard to not including items such as the balancing and interaction of potentially competing objectives related to regulation, business objectives, and actuarial cost estimates. The commentator suggested adding language in the appendix that clearly stated these exclusions from the scope.
Response	The reviewers believe that the scope is clear, and therefore made no change in response to this comment.
Comment	One commentator said that generally it was clear that the ASOP provides guidance for the estimation of future costs for prospective property/casualty risk transfer and risk funding, but noted that the introduction of the intended measure may address considerations underlying the other objectives.
Response	The reviewers made changes to section 3.2 to further clarify the concept.
Question 5: When the role of the actuary is reviewing the estimate of future costs developed by another actuary, is the guidance provided in the proposed ASOP sufficient and clear?	
Comment	Four commentators responded that the proposed ASOP was clear on this point.
Question 6: Is the level of disclosure required in the proposed ASOP sufficient and appropriate? If the response is no, what are the issues?	
Comment	Four commentators responded that the level of disclosure was sufficient and appropriate.
GENERAL COMMENTS	
Comment	Two commentators said that the proposed ASOP addressed many of the concerns that were present in earlier drafts. One of these commentators said that there were still a few areas that could benefit from clarification.
Response	The reviewers addressed specific comments in the relevant sections.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested changing the language to “future cost estimates for prospective decisions or transactions.”
Response	The reviewers consider the current language to be sufficiently clear and therefore made no change.
Comment	One commentator suggested that the second sentence be expanded to mention “risk pooling” and to add a reference to “any other risk-retention mechanisms.”
Response	The reviewers disagree regarding the addition of “risk pooling,” as it is a subset of many of the other items mentioned; however, the reviewers agree that the addition of “any other risk-retention mechanism” clarifies the language and made the suggested change.
Section 1.2, Scope	
Comment	One commentator suggested deleting the word “contract” in the phrase “developing reinsurance contract prices,” as at times it may not be a contract but rather a slip or program that the estimate is being developed for.
Response	The reviewers agree and made the suggested change.
SECTION 2. DEFINITIONS	
Section 2.2, Exposure Base	
Comment	One commentator suggested expanding the definition of exposure base to refer to the quantity of risk-transfer or risk-funding cost.
Response	The reviewers note that terms such as “measure” and “cost” are by their very nature quantitative, and made no change.
Comment	One commentator suggested that the definition of exposure base be modified to state that it is a basic unit that “may be used to measure future risk transfer and risk transfer costs” because there are several cases where this basic unit may only be used for rating and not exposure measurement.
Response	The reviewers note that when an actuary develops an estimate of the future cost, that cost typically is relative to some basis. Therefore, the phrase “is used” is more appropriate than “may be used.” The reviewers made no change.
Comment	One commentator suggested that the definition include “as a measure which is approximately proportional to the future costs.”
Response	The reviewers note that section 3.6 addresses considerations for an exposure base and that the phrase “bears a strong relationship to...cost” is more appropriate than the suggested language. Therefore, the reviewers made no change.
Section 2.4, Model	
Comment	Two commentators suggested that the definition of Model be revised to eliminate the words “a simplified presentation” because models are often quite complex. They also suggested using the definition in ASOP No. 38, <i>Using Models Outside the Actuary’s Area of Expertise (Property and Casualty)</i> .
Response	The reviewers note that even complex models are always a simplified representation of all the items that impact the modeled system. The reviewers also note that ASOP No. 38 is currently being revised to pertain to catastrophe model use in all areas of practice. Therefore, the reviewers made no change.

Section 2.5, Risk Funding (now Risk Retention)	
Comment	One commentator suggested replacing “risk funding” with “risk retention,” as the very act of creating a future cost estimate is a step toward risk funding. Once the estimate has been made, the estimate is the basis for retaining or transferring the risk.
Response	The reviewers agree and replaced “risk funding” with “risk retention.”
Comment	One commentator suggested replacing the word “loss” with “specific coverage,” as it is the coverage that gives rise to the need to estimate the future cost.
Response	The reviewers agree and made the change.
Section 2.6, Risk Transfer	
Comment	One commentator suggested that the word “loss” in this context should be replaced by “coverage,” as the risk transfer is truly defined in terms of the coverage.
Response	The reviewers agree and made the change.
Comment	One commentator suggested replacing the word “contractual” with “legally binding agreements.” The commentator also suggested adding “indemnify one party by another party,” as the agreements cannot legally shift the responsibility for risk but they can indemnify.
Response	The reviewers agree and made the changes.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Future Cost Estimate	
Comment	One commentator suggested expanding the list of examples of the elements of a future cost estimate to include the cost of ceded reinsurance.
Response	The reviewers understood the concern, added the cost of reinsurance as an item in this section and in section 1.2, and modified section 3.14 and 4.2(e).
Comment	One commentator suggested modifying the second sentence to include language that specifically relates the elements to the applicable coverage.
Response	The reviewers agree and made the change.
Section 3.2, Intended Measure	
Comment	Several commentators said that the section was unclear, and one commentator suggested that the section would be clearer if the language was recast in terms of the purpose or presumed use.
Response	The reviewers agree and revised the section to clarify that the intended measure is determined by the actuary based on the purpose or use of the future cost estimate.
Comment	Two commentators suggested that the “intended measure” might be better handled as a definition.
Response	The reviewers disagree and have followed the treatment of intended measure in the same manner as ASOP No. 43, <i>Property/Casualty Unpaid Claim Estimates</i> .
Comment	One commentator suggested changing the word “intent” to “intended use.”
Response	The reviewers agree that the word “intent” should be changed and have replaced it with “purpose or use of the estimate.”

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Comment	One commentator suggested that the ASOP be more specific about the measurement basis or considerations that impact the intended measure that is selected and provided suggested language.
Response	The reviewers did not add the suggested language but instead added a non-statistical (but still numeric) example in “high or low estimate within a range of reasonably possible outcomes.”
Comment	One commentator suggested that “intended measure” be changed to “intended statistical measure,” as all the examples are statistical in nature, and the phrase “intended measure” could be interpreted as having a non-statistical meaning.
Response	The reviewers note that non-statistical measures may also be used for the intended measure and have added a non-statistical example to this section.
Section 3.3, Organization of Data	
Comment	One commentator suggested adding a reference to ASOP No. 25, <i>Credibility Procedures</i> , when addressing organization of data (specifically balancing homogeneity with volume).
Response	The reviewers added a reference to section 3.11 of this ASOP, which cites ASOP No. 25.
Comment	One commentator suggested that this section more specifically state that the actuary should determine what data are available.
Response	The reviewers agree and made the change.
Comment	One commentator suggested changing the focus from “granularity” to “level of data organization” and expanding the examples of level of data to include coverage and risk classification.
Response	The reviewers agree and made changes consistent with this suggestion.
Comment	One commentator suggested adding the phrase “that the actuary believes” to highlight that this step involves judgment.
Response	The reviewers agree and made the change.
Section 3.5, Methods, Models, and Assumptions	
Comment	One commentator asked whether the fact that one of the methods, models, or assumptions may have a bias disqualifies it from being used even if the actuary offsets for that bias in the determination of the final result.
Response	The reviewers modified the language to read as follows: “have no known significant bias in the aggregate.”
Comment	One commentator suggested adding the phrase “adjusting for changes in conditions affecting the use of past data when estimating future costs.”
Response	The reviewers agree with the suggestion in part and added language regarding “adjusting for changes in conditions affecting the available experience.”
Section 3.6, Exposure Base	
Comment	One commentator suggested that this section was too limited in its applicability and suggested changing it from “if selecting a new exposure base or changing an existing exposure base” to “when using or changing … or selecting a new exposure base.”
Response	The reviewers disagree with the suggestion to require the evaluation of existing exposure bases. Many exposure bases have long-term and widely accepted use.

Section 3.7, Risk Classification System	
Comment	One commentator suggested changing “risk classification systems are an integral part of the development of future cost estimates” to “risk classification systems can be an integral part.”
Response	The reviewers agree and made the change.
Section 3.8, Use of Historical Data	
Comment	One commentator suggested adding a specific reference to ASOP No. 23, <i>Data Quality</i> , in this section.
Response	The reviewers note that section 3.4, Data Quality, refers the actuary to ASOP No. 23 in the consideration and choice of data for estimating future costs, and therefore made no change.
Comment	One commentator suggested changing the phrase “insurance policy provisions” to “coverage provisions,” as the revised language can be applied more broadly to all risk-transfer or risk-retention mechanisms without specifying self-insurance or other mechanisms.
Response	The reviewers agree with the commentator’s concern, and changed “risk management provisions” to “risk management and risk control strategies.”
Section 3.8.1, Use of Historical Exposure and Premium Data	
Comment	One commentator suggested replacing “a consistent exposure and rate level” with “a consistent measure of the historical exposures and the rates used to determine the historical premiums.”
Response	The reviewers agree in part and added the phrase “measurement of the historical exposures” but did not revise the language regarding a consistent rate level, as the reviewers believe the commentator’s suggested language could be misinterpreted.
Section 3.8.2, Use of Historical Loss and Loss Adjustment Expenses	
Comment	One commentator suggested adding a mention of the need to be consistent in adjusting the loss and loss adjustment data with how the premium data are adjusted.
Response	The reviewers agree with the suggestion and added language to section 3.8.3 (now section 3.8.4) to address the issue raised.
Comment	One commentator suggested language clarifying the relationship and differences between the historical period and future period.
Response	The reviewers agree and added clarifying language.
Section 3.8.3, Additional Adjustments to Historical Data (now section 3.8.4)	
Comment	One commentator suggested revising the first sentence to say “the actuary should consider whether additional adjustments to the historical data may be needed....”
Response	The reviewers agree and made the change.
Section 3.10, New Coverages or Exposures	
Comment	One commentator suggested changing “loss and loss adjustment expenses” to “data” to be consistent with language in the rest of this section.
Response	The reviewers disagree, as the reference to “data” in the remainder of the section refers to information that is broader than “loss and loss adjustment expenses.”

Comment	One commentator suggested adding the word “future” so that it would read “future coverage or exposure.”
Response	The reviewers agree that clarification is needed and have modified the opening paragraph to identify the coverage as new coverage.
Section 3.12, Modeling (deleted)	
Comment	One commentator suggested that this section is redundant, as these points are already contained in section 3.5.
Response	The reviewers agree and removed this section.
Section 3.14, Treatment of Unusual Events (now section 3.13, Treatment of Infrequent Events)	
Comment	Two commentators said that the phrase “infrequent events” was more appropriate than “unusual events,” since the characteristic trait for these events is low frequency/high severity.
Response	The reviewers agree and retitled this section “Treatment of Infrequent Events.”
Comment	Two commentators suggested that the proposed ASOP does not provide guidance for treating coverages (such as Umbrella) where the frequency of losses by layer varies in such a way that it may be appropriate to use different methodologies by layer.
Response	The reviewers agree and added a reference to address estimating losses in higher layers where different methodologies may be appropriate.
Section 3.17, Additional Funding Sources (now section 3.16)	
Comment	One commentator suggested changing the title to “Additional Sources of Income.”
Response	The reviewers disagree as the change from “funding” to “income” would more narrowly define the type of funds that may be available.
Comment	One commentator suggested changing “assessments to policyholders” to “assessments paid by policyholders.”
Response	The reviewers agree and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communications	
Comment	Several commentators suggested that the requirement to disclose the assumptions used in developing or reviewing the future cost estimates was overly broad or burdensome. A few of these commentators suggested that the disclosure be limited to material and explicit assumptions.
Response	The reviewers modified the language to require disclosure of material assumptions.
Section 4.2, Disclosures	
Comment	One commentator suggested limiting the required disclosure to material assumptions.
Response	The reviewers modified the language to require disclosure of material assumptions.

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Comment	Two commentators said that the language is too broad and appears to encompass all adjustments made to the historical data including adjustments made to address issues of data quality. The commentator suggested that the adjustments made to address data quality should be governed by ASOP No. 23 and that clarifying language be added to this section.
Response	The reviewers agree and revised the section as follows: “if the actuary uses historical data, the actuary should disclose any adjustments made to the historical data to account for expected differences between the historical data and future experience (see sections 3.8 and 3.10). For adjustments made to address issues of data quality, refer to ASOP No. 23.”

APPENDIX

Comment	One commentator suggested revising the last sentence in the next-to-last paragraph to “Such other influences may affect decisions about prices or premium rates, but such influences may or may not be consistent with the intended measure used for actuarial future cost estimates in deciding upon final rates and prices.”
Response	The reviewers believe the existing language is sufficiently clear and made no change.
Comment	One commentator suggested adding the following: “as innovation and the use of new data and technologies affect the environment in which actuaries operate, continuing education for actuaries will be important for the application of this ASOP.”
Response	The reviewers do not believe the suggested language is needed here as actuaries are already subject to continuing education requirements per the <i>Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States</i> .



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 54**

Pricing of Life Insurance and Annuity Products

**Developed by the
Life Insurance and Annuity Pricing Task Force
of the Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2018**

Doc. No. 193

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June 2018

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Pricing of Life Insurance and Annuity Products

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 54, *Pricing of Life Insurance and Annuity Products*

This document is the final version of ASOP No. 54, *Pricing of Life Insurance and Annuity Products*.

History of the Standard

The ASB periodically reviews the completeness of ASOPs for all practice areas and asked the Life Committee to consider whether an ASOP addressing life insurance and annuity pricing principles would be appropriate. In October 2014, the ASB Life Committee distributed a Request for Comments regarding an ASOP focused on life insurance and annuity pricing. Sixteen comment letters were received. Most of the comments supported the drafting of such an ASOP.

The pricing of products is one of the most important functions actuaries perform. Therefore, the ASB Life Committee believes that the profession would be well served by an ASOP providing guidance regarding life insurance and annuity product pricing. The ASB agreed and approved the creation of an exposure draft.

First Exposure Draft

In March 2016, the ASB approved an exposure draft of this proposed ASOP. Seventeen comment letters were received and considered in making changes that were reflected in the second exposure draft.

Second Exposure Draft

In June 2017, the ASB approved a second exposure draft with a comment deadline of October 31, 2017. Six comment letters were received and considered in making changes that are reflected in this final ASOP.

The ASB thanks all those who made comments on each of the exposure drafts.

Notable Changes from the Second Exposure Draft

Notable changes from the second exposure draft in response to the comment letters include the following:

1. The fifth paragraph of section 1.2 was clarified by adding the following: “To the extent that a product does not clearly fall into the scope just described, the actuary should use professional judgment to determine whether the product is in scope.”
2. An example was added to the sixth paragraph of section 1.2 to clarify that the ASOP would apply in the case of a product written on an individual policy form that offers both a death benefit and a long-term care benefit.
3. A seventh paragraph was added to section 1.2 to clarify that the standard “does not apply to actuaries when performing actuarial services with respect to the pricing of reinsurance contracts.”
4. The definition of pricing in section 2.2 was revised by adding the phrase “including evaluating the product’s profitability and underlying risks” to the first sentence;
5. Section 3.5.1, Cost of Capital, was removed. The concept is now covered in section 3.1.1(c).
6. Several clarifying revisions were made to section 3.6, Governance and Controls.
7. Guidance was added to section 4.1 to state that the actuary should disclose “the material results of any additional profitability analysis that was performed.”

The ASB voted in June 2018 to adopt this standard.

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Life Insurance and Annuity Pricing Task Force

David A. Brentlinger, Chairperson	
Jodi L. Kravitz	Steven L. Putterman
Lisa S. Kuklinski	Anthony J. Tokarz

Life Committee of the ASB

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

PRICING OF LIFE INSURANCE AND ANNUITY PRODUCTS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing actuarial services with respect to the **pricing** of life insurance and annuity products, including riders attached to such products. Throughout the remainder of the ASOP, the use of the term “product” includes riders attached to life insurance and annuity products.
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to the **pricing** of life insurance and annuity products when a product is initially developed or when charges or benefits are changed for future sales.

This standard does not apply to any changes made on in-force policies. Such resetting of nonguaranteed elements, including dividends, on products in force is outside the scope of this ASOP and is addressed in ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*, and No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*. The actuary should also refer to ASOP Nos. 2 or 15 when determining nonguaranteed elements or dividends when a product is initially developed or when charges or benefits are changed for future sales.

The standard does not include guidance on compliance with federal antitrust laws or the evaluation of other considerations (such as marketing, sales, and competition) that may affect the ultimate price.

The standard applies to actuaries when performing actuarial services related to life insurance and annuity products written on individual policy forms and to group master contracts with individual certificates that are priced in a similar manner to products written on individual life and annuity policy forms.

Products not priced in a similar manner to those written on individual life and annuity policy forms or products that do not have material mortality or morbidity risk are not in scope. Two examples are traditional group term life and certain retirement funding products (for example, synthetic guaranteed interest contracts). To the extent that a product does not clearly fall into the scope just described, the actuary should use professional judgment to determine whether the product is in scope.

To the extent that the guidance in this standard may conflict with guidance in other ASOPs regarding the **pricing** of specific benefits other than life and annuity benefits, the guidance in other ASOPs will govern the **pricing** of such other specific benefits. For

example, the **pricing** of a product that offers both a death benefit and a long-term care benefit written on an individual policy form would be within the scope of this ASOP. However, to the extent that the guidance in this standard conflicts with guidance in other ASOPs regarding the **pricing** of the long-term care benefit, the guidance in other ASOPs would govern the **pricing** of such long-term care benefits.

This standard does not apply to actuaries when performing actuarial services with respect to the **pricing** of reinsurance contracts.

This standard does not apply to actuaries when performing actuarial services with respect to illustrations of nonguaranteed charges or benefits subject to ASOP No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.2.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard will be effective for any actuarial services performed on or after December 1, 2018.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

- 2.1 **Modeling Cell**—Policies or contracts that are treated in a model as being completely alike with regard to, for example, demographic characteristics, assumptions, policy provisions, and underwriting class.
- 2.2 **Pricing**—The process of determining charges for, and benefits provided by, an insurance policy or annuity contract at issue, including evaluating the product's profitability and underlying risks. Examples of charges include premiums, cost of insurance charges, separate account charges, surrender charges, and policy fees. Examples of benefits include death benefits, surrender benefits, interest credits, dividends, and income benefits.
- 2.3 **Profitability Analysis**—An evaluation of a product's expected financial results using a set of assumptions, a specified model, and specified **profitability metric(s)**.
- 2.4 **Profitability Metric**—A measurement used to assess a product's expected level of financial results.

- 2.5 **Risk Capital**—The amount of capital a company chooses to hold to meet a business objective, given its risk profile.
- 2.6 **Sensitivity Analysis**—Analysis performed by changing an assumption or set of assumptions and comparing the results to those resulting from the baseline assumption(s).
- 2.7 **Stochastic Analysis**—Analysis performed using a model that estimates distributions of potential outcomes by allowing random variation in one or more inputs to the model.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Initial Pricing Considerations**—When preparing for the **pricing** exercise, the actuary should take into account the criteria of the actuary’s principal and the relevant characteristics of the product.
 - 3.1.1 **Criteria of the Actuary’s Principal**—Criteria of the actuary’s principal, which are usually related to profitability and risk, include, but are not limited to, the following:
 - a. the choice of **profitability metrics**;
 - b. targets for **profitability metrics**, including any special circumstances, such as targets for shorter periods of time or situations where profits are expected to be followed by losses. Targets often are stated at an aggregate product level and may be stated at other levels as determined by the principal, such as at the **modeling cell** level;
 - c. the approach for incorporating the cost of maintaining a defined level of **risk capital** into the **profitability analysis**; and
 - d. how risk management policies of the company relate to product **pricing**; for example, how tolerant the actuary’s principal is to volatility in earnings and the balance sheet.
 - 3.1.2 **Relevant Characteristics of the Product**—Relevant characteristics of the product include, but are not limited to, the following:
 - a. the intended design objectives of the product;
 - b. the intended market, anticipated sales, and the competitive alternatives to the product;
 - c. how the product will be sold, for example, underwriting, distribution, and marketing;

- d. how the product will be administered, including any limitations in administrative and valuation systems that could impact product design or operational risks;
 - e. potential risk mitigation strategies such as reinsurance and hedging;
 - f. applicable law (statutes, regulations, and other legally binding authority); and
 - g. the tax treatment of the product as it applies to both the owner and the insurer.
- 3.2 **Selecting Profitability Metrics**—The actuary should select one or more **profitability metrics** in a manner consistent with the criteria of the actuary’s principal and the underlying design and risks of the product.
- 3.2.1 **Profitability Metrics**—The actuary should consider using more than one **profitability metric** when evaluating the expected profitability and underlying risks. Examples of **profitability metrics** include, but are not limited to, the following:
- a. the expected return on initial invested capital, often referred to as the internal rate of return;
 - b. the average of expected future periodic returns on capital, often referred to as average return on equity;
 - c. a measure of profitability expressed as a percentage of premium, often referred to as profit margin;
 - d. the present value of expected future profits as a percentage of the present value of expected assets, often referred to as return on assets;
 - e. the present value of expected future profits, often referred to as the value of new business; and
 - f. the time period when a measure of cumulative profits turns positive, often referred to as break-even year.
- The actuary should use discount rates that are appropriate for the selected **profitability metric**, where applicable.
- 3.2.2 **Considerations When Selecting a Profitability Metric**—When selecting a **profitability metric**, the actuary should consider the following:

- a. the expected pattern of profits over time (for example, the pattern of gains and losses, however measured);
 - b. the significance of the product's underlying risks (for example, the size and pattern of **risk capital**); and
 - c. any other considerations that the actuary determines are relevant (for example, limitations of the **profitability metric** for the product being priced).
- 3.3 **Developing or Selecting the Model**—The actuary should develop or select the model to support **pricing** in a manner consistent with the criteria of the actuary's principal. The actuary should develop or select a model that accommodates the design of the product and the selected **profitability metrics** and reasonably simulates the future financial impact of the product.
- When developing or selecting the model, the actuary should consider the following:
- a. Time Horizon—the degree to which the model extends over a sufficient time period such that the profitability results and underlying risks of the product are adequately captured;
 - b. Granularity—the degree to which the model accommodates the necessary detail of model components, such as time intervals, **modeling cell** structure, and assumptions that vary by **modeling cell**, to appropriately represent the expected profitability and underlying risk of future sales;
 - c. Dynamic Assumptions—the degree to which the model accommodates how certain assumptions, such as policy behavior assumptions, may vary based on other factors;
 - d. Asset Returns—the degree to which the model accommodates asset returns consistent with how returns are expected to be recognized and allocated to the product;
 - e. Economic Scenarios—the degree to which the model accommodates, if appropriate, market consistent or real world scenarios that represent an appropriate range of future economic conditions;
 - f. Accounting and Actuarial Bases—the degree to which the model accommodates the accounting standards and practices (for example, statutory, GAAP, and tax) and the assumptions and methods used to calculate reserves and other actuarial balances that underlie the **profitability metrics** to be used in **pricing**;
 - g. Risk Capital Framework—the degree to which the model accommodates a **risk capital** framework that is expected to be used in practice;

- h. Taxes—the degree to which the model accommodates a tax structure that is expected to apply, given the product, the tax position of the company, and the company's tax allocation practices;
 - i. Risk Evaluation—the degree to which the model accommodates an appropriate method to evaluate risks, as described in section 3.5;
 - j. Risk Mitigation—the degree to which the model appropriately accommodates risk mitigation strategies that are expected to be used to support the product;
 - k. Model Validation—the degree to which the model is sufficiently transparent to support validation, as described in section 3.6; and
 - l. any other items the actuary determines are significant to the model.
- 3.4 Pricing Assumptions—The actuary should use professional judgment to set assumptions that are reasonable for the intended purpose and reflect expected future experience based on the following considerations.
- 3.4.1 Historical Experience Used When Setting Assumptions—The actuary should use professional judgment to ensure that relevant historical experience is reflected when setting assumptions.
 - 3.4.1.1 Assumptions Based on Relevant and Credible Data—The actuary should use assumptions based on relevant and credible data, such as company experience, industry experience, and other relevant experience, which may be modified to reflect any data deficiencies.
 - 3.4.1.2 Assumptions Based on Historical Experience—When using historical experience, the actuary should consider whether there are reasons to expect that future experience will differ from past experience.
 - 3.4.1.3 Assumptions When There Is No Relevant Historical Experience—In some instances, no relevant historical experience is available to the actuary. In this situation, the actuary should use professional judgment, considering available sources of data, when setting assumptions.
 - 3.4.2 Assumption Margins—The actuary should consider the appropriateness of including a margin in the assumptions. When setting a margin, the actuary should consider the following:
 - a. the degree to which there is uncertainty around the assumptions due to lack of relevant, credible company or industry experience data to support the assumptions;

- b. whether the degree of uncertainty may vary over different periods of time within the time horizon of the model; and
 - c. whether the level of margins is appropriate for each assumption individually and in aggregate for all assumptions.
- 3.4.3 **Consistency of Assumptions**—The actuary should use assumptions that are internally consistent and reflect any interdependencies with each other, consistent with current and anticipated company practices, and, where appropriate, consistent with similar assumptions used for other assignments within the company and its associated entities.
- 3.4.4 **Assumption Setting**—When setting assumptions, the actuary should consider the following:
- a. sales mix assumptions that reflect the anticipated distribution of sales across **modeling cells**;
 - b. investment assumptions and economic market assumptions that reflect real world or market consistent theory, where appropriate, and that include assumptions for reinvestment, asset default, and investment expenses;
 - c. mortality and morbidity assumptions that incorporate the effects of risk selection and classification of future applicants, the impact of expected trends on future assumptions, and product features such as conversion and level premium periods on term coverage;
 - d. for experience that is elective in nature, such as the policyholder's ability to pay or not pay premiums, to receive certain types of benefits, or to terminate the contract, assumptions that consider the causal variables impacting the policyholder's behavior, such as relevant policyholder characteristics (for example, age), policy or rider characteristics (for example, size of policy), tax treatment of the product as it applies to the owner, and the value of guaranteed benefits driven by external factors (for example, the current interest rate environment and underlying market performance);
 - e. expense assumptions that reflect anticipated future trends in expenses (for example inflation or expense efficiencies). The actuary should consider the appropriateness of the basis (for example, fully allocated, marginal) when developing expense assumptions; and
 - f. the principal's capacity and intent with regard to in-force management strategies, including the determination of nonguaranteed elements and dividends.

The actuary should consider the extent to which certain of these assumptions may also be influenced by the following:

1. product design;
2. the intended market and the competitive alternatives to the product; and
3. how the product will be sold, for example, underwriting, distribution, and marketing.

When setting assumptions in areas outside the actuary's area of expertise, the actuary should consider incorporating the views of experts. However, the actuary should set assumptions that reflect his or her professional judgment.

3.4.5 **Capital Market Assumptions**—When analyzing the cost of a benefit that can be replicated using liquid capital market instruments, the actuary should consider comparing the cost of the benefit using market consistent assumptions to the price of a comparable investment guarantee observed in capital markets to assess how well the results of the analysis align with the profitability goals and risk management policy of the actuary's principal.

3.4.6 **Documentation of Assumptions, Rationale, and Data Modifications**—The actuary should document the assumptions, the rationale behind the assumptions, and any modifications made to data sources. If margins are included in assumptions, the actuary should document the approach used and, where practicable, the margin component of each assumption.

In setting assumptions, the actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance.

3.5 **Risk Evaluation**—The actuary should evaluate the risks in the product when performing a **profitability analysis**.

3.5.1 **Sensitivity Analysis**—The actuary should use **sensitivity analysis** to evaluate the impact of deviations in assumptions on profitability results and should consider performing more analysis for assumptions that have a significant impact on the **profitability analysis** than for assumptions that have less impact.

3.5.2 **Stochastic Analysis**—The actuary should consider using **stochastic analysis** to evaluate the distribution of the results of the **profitability analysis** from variations in key assumptions, in particular interest rates and equity returns. When performing **stochastic analysis**, the actuary should evaluate the results of the **profitability analysis** not only in the aggregate but also for a selection of individual scenarios.

The actuary may consider other risk evaluation techniques, as appropriate.

The actuary should consider the impact of risk mitigation strategies that are expected to be implemented at the product and company level and the expected effectiveness of those strategies.

3.6 **Governance and Controls**—The actuary should use, or, if appropriate, may rely on others to use, reasonable governance and controls over the actuarial services provided as part of **pricing**. Examples of possible governance and controls include the following:

- a. effective oversight of methods and assumptions used in **pricing**;
- b. preservation and protection of the model from unintentional or untested changes;
- c. validation of the appropriate use of the inputs in model calculations;
- d. validation that values from the models are consistent with independent calculations of such values from outside the model;
- e. validation that the model reasonably simulates the expected future financial impact of the product; and
- f. review of assumptions and other aspects of the model by another knowledgeable person who conducts the review in an objective way.

The actuary should document the governance and controls used by the actuary as part of **pricing**. The actuary should disclose any reliance on governance and controls used by others.

3.7 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance. The actuary should disclose the extent of any such reliance.

3.8 **Reliance on Assumptions Provided by Others**—When relying on assumptions provided by others, the actuary should refer to ASOP No. 41, *Actuarial Communications*. The actuary should disclose the extent of any such reliance.

3.9 **Documentation**—The actuary should prepare and retain documentation in accordance with ASOP No. 41.

Section 4. Communications and Disclosures

4.1 **Actuarial Communications**—When issuing any actuarial communication relating to this ASOP, the actuary should refer to ASOP No. 41. The actuary should consider the needs of the intended user in communicating the actuarial findings in any actuarial report. In

addition, in any actuarial report concerning **pricing**, the actuary should disclose the following, if practical and relevant:

- a. criteria of the actuary's principal, as described in section 3.1.1;
- b. relevant characteristics of the product, as described in section 3.1.2;
- c. the **profitability metrics** used in the **profitability analysis** and how these metrics are consistent with the criteria of the actuary's principal, as described in section 3.2;
- d. the considerations used to determine the model, as described in section 3.3;
- e. material pricing assumptions and the manner in which the actuary established these assumptions to reflect expected future experience, adjusted to include any margin, as described in section 3.4;
- f. results of risk evaluation, as described in section 3.5;
- g. any reliance on governance and controls used by others, as described in section 3.6;
- h. any reliance on data or other information supplied by others, as described in section 3.7;
- i. any reliance on assumptions provided by others, as described in section 3.8; and
- j. results of the **profitability analysis**, in a format comparable to the **profitability metric** targets described in section 3.1.1(b), and the material results of any additional **profitability analysis** that was performed.

4.2 **Additional Disclosures**—The actuary should also include the following disclosures, as applicable, in an actuarial communication:

- a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);
- b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Pricing life insurance and annuity products is a complex process and requires management to make decisions based on a variety of inputs that often include analyses of profitability and risk performed by actuaries. The roles performed by actuaries when pricing are significant and varied. They can range from technical analysis of profitability to the development of marketing strategies for a proposed product. While the final decisions on product design, price, and marketing are the responsibility of management, information necessary for making those decisions is most often provided by actuaries. Management must balance business growth, profitability, and other strategic goals when setting the parameters for a proposed new product. Actuaries are typically asked to evaluate the profitability and risk inherent in those parameters. Management relies on actuarial analyses to make decisions that impact the ability of the insurance company to meet its goals in the future.

Several ASOPs currently address various aspects of the pricing of life insurance and annuity products. Examples include the following:

- ASOP No. 2, *Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts*;
- ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*;
- ASOP No. 12, *Risk Classification (for All Practice Areas)*; and
- ASOP No. 15, *Dividends for Individual Participating Life Insurance, Annuities, and Disability Insurance*.

This ASOP supplements the guidance provided by existing ASOPs and provides guidance to actuaries providing actuarial services related to the pricing of life insurance and annuity products, including riders attached to such products.

Most life insurance and annuity products provide multi-year guarantees in the form of a fixed premium, guaranteed benefits, or limits on the ability of the company to change future premiums, fees, or benefits. In these situations, the company must commit to the price before the product is sold and may have to honor that commitment for a lifetime. It is critical that the actuarial analyses supporting that commitment meet accepted standards.

Current Practices

Pricing life insurance and annuity products typically requires developing an actuarial model to apply expected future experience to measure the risks inherent in the product design and the likely future profit. Setting the assumptions for future experience is typically the role of the actuary, although at times either regulation (for example, unisex legislation) or management will mandate the use of a certain assumption.

Developments in consumer preferences and medical science will continue to affect policyholder behavior, future mortality rates, and product profitability. Other examples of existing trends that are expected to affect life insurance and annuity product pricing include the following:

- Principle-based approaches to determining statutory accounting requirements provide more flexibility and responsibility for actuaries in establishing the assumptions and methods that are used in that context.
- Vendors and other third parties are playing increasingly important roles in the traditional pricing and product distribution functions.
- Risks and opportunities are created by new distribution models, disruptive market entrants, and technology.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this proposed ASOP, *Pricing of Life Insurance and Annuity Products*, was issued in June 2017 with a comment deadline of October 31, 2017. Six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Life Insurance and Annuity Pricing Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term “reviewers” in appendix 2 includes the Life Insurance and Annuity Pricing Task Force, the ASB Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

TRANSMITTAL MEMORANDUM QUESTIONS	
Question 1: Is it clear what actuarial services are covered in section 1.2, Scope? If not, please give an example of an actuarial service or a product whose exclusion is unclear and how to clarify.	
Comment	All commentators who answered this question answered “yes.” Three of these commentators included additional comments, which the reviewers addressed in the relevant section.
Question 2: Throughout the ASOP, there are references to “the criteria of the actuary’s principal.” Are the examples in section 3.1.1, Criteria of the Actuary’s Principal, adequate to apply the guidance included in the draft ASOP?	
Comment	All commentators who answered this question answered “yes.” Two of these commentators included additional comments, which the reviewers addressed in the relevant section.
Question 3: Is the guidance in section 3.6, Governance and Controls, clear?	
Comment	All commentators who answered this question answered “yes.” Two of these commentators included additional comments, which the reviewers addressed in the relevant section.
GENERAL COMMENTS	
Comment	One commentator suggested organizational changes to the document.
Response	The reviewers considered the suggestions and made those that they believe improve the ASOP.
Comment	Several commentators suggested minor editorial changes throughout the ASOP.
Response	The reviewers considered the suggestions and made those that they believe improve the ASOP.

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Comment	One commentator encouraged the ASB to minimize areas of overlap between the life and annuity pricing ASOP and ASOPs that are currently in development and, where overlap is unavoidable, to strive for consistency.
Response	The reviewers note that sections in the life and annuity pricing ASOP were created with other draft ASOPs in mind for consistency. Specifically, the reviewers believe it is appropriate to include guidance regarding modeling and assumption setting, two areas being addressed by draft ASOPs, in the life and annuity pricing ASOP.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE

Section 1.2, Scope	
Comment	One commentator suggested clarifying whether long-term care riders or benefits were included in the scope of this ASOP.
Response	The reviewers addressed the comment by adding an example to the fifth paragraph of section 1.2.
Comment	One commentator said that the second paragraph seemed to contradict section 3.1.2.
Response	The reviewers note that items listed in section 3.1.2 are items that should be taken into account when preparing for pricing. The reviewers do not believe clarification is needed, and therefore made no change.
Comment	One commentator suggested adding language stating that the actuary should use professional judgment to determine whether a product is in scope if the product does not obviously fall into the scope described in section 1.2.
Response	The reviewers agree and added language consistent with the suggestion.
Comment	One commentator suggested including the review of pricing work in the scope of the ASOP.
Response	The reviewers believe that the review of actuarial services is already included per the definition of “actuarial service” in the <i>Code of Professional Conduct</i> and ASOP No. 1, <i>Introductory Actuarial Standard of Practice</i> , and therefore made no change.
Comment	One commentator suggested deleting the sentence “Actuarial services may also include advising on the design of the product” and adding “design” in the following sentence: “Although the actuary needs to be mindful of all considerations that may affect the ultimate price and design of the product.”
Response	The reviewers noted the comment and deleted the reference to design.
Comment	One commentator suggested revisions to clarify the types of investment products that are out of scope of this ASOP.
Response	The reviewers revised the language to address the commentator’s concern.

SECTION 2. DEFINITIONS

Section 2.1, Modeling Cell	
Comment	Two commentators suggested changes to the definition to clarify it and make it more consistent with existing ASOPs.
Response	The reviewers note that the use of the definition within this ASOP is focused on the liability model rather than the asset model. The definition is consistent with the definition in ASOP No. 52, <i>Principle-Based Reserves for Life Products under the NAIC Valuation Manual</i> , but has been slightly revised to better fit the scope of this ASOP. Therefore, the reviewers made no change.

Section 2.2, Pricing	
Comment	One commentator said that the definition of pricing seemed too narrow, considering the scope of the guidance in the rest of the ASOP. The commentator also said that the definition did not recognize that the actuary may not set final charges and benefits/credits.
Response	The reviewers believe that the definition adequately describes the pricing process. The reviewers also believe that further guidance with regard to the pricing process is more appropriately presented in other sections of the ASOP. Therefore, the reviewers made no change.
Comment	One commentator recommended expanding the definition to include “credits” along with charges and benefits and address guaranteed and nonguaranteed elements.
Response	The reviewers incorporated some of the suggested revisions to the definition.
Section 2.3, Profitability Analysis	
Comment	One commentator recommended including analysis of various levels (for example, model cell) in the definition.
Response	The reviewers believe that further guidance with regard to the pricing process is more appropriately presented in other sections of the ASOP, and therefore made no change.
Section 2.4, Profitability Metric	
Comment	One commentator suggested replacing “metric” with “measure” for clarification.
Response	The reviewers believe that the definition is consistent with common usage and is used appropriately throughout the ASOP, and therefore made no change.
Comment	One commentator recommended including the examples of profitability metrics as part of the definition.
Response	Given the importance of profitability metrics, the reviewers believe it is more appropriate to list the examples in section 3.2.1, and therefore made no change.
Section 2.5, Risk Capital	
Comment	One commentator questioned the reference to “severe risk,” stating that “risk capital” is designed to address events significant enough to adversely affect the expected profitability of a product, and that some people may not consider such events “severe.”
Response	The reviewers agree that the definition needed to be clarified and revised the language.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Initial Pricing Considerations	
Comment	One commentator suggested that the ASOP focused on profitability metrics to the exclusion of items such as the patterns of reserves and capital and the examination of individual scenarios in stochastic testing.
Response	The reviewers note that section 3.1.1(b) addresses patterns of reserves. The reviewers agree with the comment regarding stochastic testing and added language to section 3.5.3 (now section 3.5.2) consistent with the suggestion.
Comment	One commentator suggested replacing the phrase “take into account the criteria of the actuary’s principal and the relevant characteristics of the product” in the first paragraph with “consider the following.”
Response	The reviewers disagree with the suggestion, and therefore did not make the change.

Section 3.1.1, Criteria of the Actuary’s Principal	
Comment	One commentator suggested moving “criteria of the actuary’s principal” to the end of section 3.1.
Response	The reviewers disagree with the suggestion, and therefore did not make the change.
Comment	One commentator suggested changing the language from “include, but not limited to” to “may” in the first sentence.
Response	The reviewers disagree with the suggestion, and therefore did not make the change.
Section 3.1.1(a)	
Comment	One commentator stated that the description contributed to confusion about whether metrics are a measurement basis or a number, and suggested revisions.
Response	The reviewers believe that metrics are appropriately defined in section 2.4 as measurements and distinguished from numbers via section 3.1.1(b), which addresses targets for these metrics. The reviewers made revisions to address the commentator’s suggestions, including moving the reference to aggregate product and modeling cell levels from 3.1.1(a) to 3.1.1(b).
Section 3.1.1(b)	
Comment	One commentator noted the absence of guidance on setting targets if they are not included in the criteria of the principal.
Response	The reviewers believe that guidance on setting targets for profitability metrics that are not included in the criteria of the principal is outside the scope of the ASOP, and therefore made no change.
Comment	One commentator suggested changing “metrics” to “results.”
Response	The reviewers disagree and retained the word “metrics.”
Section 3.1.1(c) (now section 3.1.1[d])	
Comment	One commentator suggested adding the words “the type and” prior to “the level of risk contained in the product being priced.”
Response	The reviewers addressed the comment by revising section 3.1.1(c) (now section 3.1.1[d]) and by adding a new section 3.1.1(c).
Comment	One commentator asked for clarification of “risk management policies” and noted that concrete examples would be helpful.
Response	The reviewers addressed the comment by revising section 3.1.1(c) (now section 3.1.1[d]), adding a new section 3.1.1(c), and revising the example.
Section 3.1.2, Relevant Characteristics of the Product	
Comment	One commentator questioned whether the actuary should consider unintended consequences for the product.
Response	The reviewers believe this situation is addressed in section 3.5.2 (now section 3.5.1), and therefore made no change.
Comment	One commentator suggested replacing this section with a term such as “policy considerations” and defining the term in section 2, citing concerns that the list was not all-inclusive.
Response	The reviewers prefer to enumerate these characteristics in the body of the standard to give these considerations appropriate emphasis. Given that the section states that considerations are not limited to this list, additional considerations may apply. The reviewers therefore made no change.

Comment	One commentator stated that laws and regulations are not product characteristics.
Response	The reviewers believe that applicable laws directly impact the product, and therefore made no change.
Comment	One commentator proposed adding risk mitigation strategies to the list of product characteristics.
Response	The reviewers agree and made revisions consistent with the suggestion in a new section 3.1.2(e).
Section 3.1.2(b)	
Comment	One commentator suggested adding “anticipated” before “sales” and deleting “goals.”
Response	The reviewers agree and made the changes.
Section 3.2.2, Considerations When Selecting Profitability Metrics	
Comment	One commentator suggested moving discount rates from section 3.4.4(f) to section 3.2.2, because they are not assumptions.
Response	The reviewers agree with the commenter’s reasoning and moved the language on discount rates to section 3.2.1.
Section 3.2.2(b)	
Comment	One commentator pointed out that product risk and capital-intensity are not necessarily related, and cited Whole Life as an example.
Response	The reviewers revised the language to address the commentator’s concern.
Comment	One commentator suggested adding a point to refer to the limitations of the profitability metric.
Response	The reviewers agree and modified section 3.2.2(c) to include limitations as an example of other considerations the actuary may determine to be relevant.
Section 3.3, Developing the Model	
Comment	One commentator suggested including the situation of the actuary as user but not developer of the model.
Response	The reviewers added “or select” after “the actuary should develop” the model.
Comment	One commentator suggested changing “uses” to “reflects” in section 3.3(g).
Response	The reviewers addressed the comment by replacing “use” and “incorporate” with “accommodate” throughout section 3.3.
Section 3.3(b), Granularity	
Comment	One commentator suggested shortening the description of granularity to “the degree to which (1) the number of modeling cells represents the number of different policy characteristics, and (2) the modeling cells reflect different assumptions or time intervals,” and deleting the example.
Response	The reviewers revised the language to address the commentator’s concerns.
Section 3.3(f), Accounting and Actuarial Bases	
Comment	Several commentators asked for clarification or suggested revisions to “accounting and actuarial bases.”
Response	The reviewers revised the language to clarify “accounting and actuarial bases” and address the commentators’ concerns.

Section 3.3(j), Risk Mitigation	
Comment	One commentator suggested moving examples of risk mitigation strategies to section 3.1.2.
Response	The reviewers agree and made changes consistent with the comment.
Section 3.4, Pricing Assumptions	
Comment	One commentator noted that it was not clear how sections 3.4.1.2 and 3.4.1.3 differed from 3.4.1 and 3.4.1.1.
Response	The reviewers note that sections 3.4.1.1, 3.4.1.2, and 3.4.1.3 elaborate on the guidance provided in section 3.4.1.
Comment	One commentator asked whether this section was too detailed given that a proposed ASOP on setting assumptions is also in development. The commentator also asked whether there were any special considerations related specifically to setting pricing assumptions and noted the risk of guidance in different ASOPs conflicting.
Response	The reviewers believe the guidance is appropriate for actuaries when performing actuarial services as defined in section 1. The reviewers note that new standards address conflicts with other ASOPs. Therefore, the reviewers made no change in response to this comment.
Comment	One commentator suggested adding references to ASOP Nos. 23, <i>Data Quality</i> , and 25, <i>Credibility Procedures</i> , in section 3.4.
Response	The reviewers moved the reference to ASOP No. 25 to the end of the section so that it applies to all of section 3.4. The reviewers note that a reference to ASOP No. 23 is already included in section 3.7, and therefore did not add another in this section.
Section 3.4.1, Historical Experience Used When Setting Assumptions	
Comment	One commentator suggested deleting this section.
Response	The reviewers note that this section sets up the associated considerations in sections 3.4.1.1, 3.4.1.2, and 3.4.1.3, and therefore made no change.
Section 3.4.1.1, Assumptions Based on Relevant and Credible Data	
Comment	One commentator suggested adding “smoothness and data quality” as a reason to modify the assumptions.
Response	The reviewers revised the language by adding a reference to data deficiencies. The reviewers also eliminated the reference to “circumstances being modeled” and added “are reasonable for the intended purpose” to the first paragraph of section 3.4. The reviewers believe that, with this revision, smoothness is adequately addressed in the first paragraph of section 3.4, and therefore did not make the suggested change.
Comment	One commentator suggested moving the reference to ASOP No. 25 to section 3.4.
Response	The reviewers agree and made the change.
Section 3.4.2, Assumption Margins	
Comment	One commentator suggested deleting “such as when a new product is being introduced to the marketplace” in section 3.4.2(a).
Response	The reviewers agree and made the change.

Section 3.4.3, Consistency of Assumptions	
Comment	One commentator suggested clarifying the phrase “other components of the model.”
Response	The reviewers agree and revised the sentence to read, “The actuary should use assumptions that are internally consistent and reflect any interdependencies with each other”
Comment	One commentator suggested that the interaction of different assumptions should be considered.
Response	The reviewers agree and added appropriate language.
Comment	One commentator suggested that examples be included after the phrase “... consistent with assumptions used for other assignments within the entity.”
Response	The reviewers believe the language is sufficiently clear and therefore made no change.
Section 3.4.4, Product Design and Assumption Setting (now Assumption Setting)	
Comment	One commentator suggested deleting “Product Design” from the title.
Response	The reviewers agree and made the change.
Comment	One commentator sought clarification of the phrase “classification of future applicants” in 3.4.4(c).
Response	The reviewers replaced “classification” with “risk selection and classification.”
Comment	One commentator suggested adding “population characteristics” to the mortality and morbidity assumptions considerations in 3.4.4(c).
Response	The reviewers believe the comment is adequately addressed, and therefore made no change.
Comment	One commentator suggested adding the phrase “if those features exist in the product” to the end of section 3.4.4(g) (now section 3.4.4[f]).
Response	The reviewers do not believe the suggested wording is necessary, and therefore made no change.
Comment	One commentator suggested adding “other” before “nonguaranteed elements” in section 3.4.4(g) (now section 3.4.4[f]).
Response	The reviewers revised the sentence to reference nonguaranteed elements prior to dividends.
Comment	One commentator suggested replacing “distribution channel through which the product will be sold” in the second-to-last paragraph of section 3.4.4 with the “relevant product considerations” that are listed in section 3.1.2.
Response	The reviewers deleted “distribution channel through which the product will be sold” and added the items from section 3.1.2 that the actuary should consider in setting assumptions.
Comment	One commentator suggested deleting the word “incorporating” from the last paragraph and that the paragraph should be broadened to apply to more sections of the proposed ASOP.
Response	The reviewers believe including “incorporating” is appropriate and did not delete it. The reviewers believe that expanding “incorporating the view of experts” into other areas of the ASOP is not necessary, and therefore did not make that change.
Section 3.4.5, Capital Market Assumptions	
Comment	One commentator recommended revising the language in the last sentence from “to assure that it aligns” to “to assess how well it aligns.”
Response	The reviewers agree and made revisions consistent with the comment.

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Comment	One commentator recommended deleting the entire “Capital Markets Assumption” section, stating that the first sentence is covered in both “Consistency of Assumptions” and “Assumption Setting,” and the second sentence is too detailed and prescriptive for an ASOP.
Response	The reviewers agree with regard to the first sentence and deleted it. The reviewers disagree with regard to the second sentence and retained it, but note that the sentence has been revised in response to another comment.
Section 3.4.6, Documentation of Assumptions, Their Rationale, and Data Modifications (now Documentation of Assumptions, Rationale, and Data Modifications)	
Comment	One commentator recommended moving all references of documentation to section 3.8.
Response	The reviewers did not move all references to documentation to section 3.8, as it is ASB practice to include guidance relating to documentation, as appropriate, throughout section 3.
Comment	One commentator suggested adding a documentation requirement if the company sets a design or price that is different from what the actuary recommends.
Response	The reviewers disagree, and therefore made no change.
Section 3.5, Risk Evaluation	
Comment	One commentator suggested replacing “evaluate the impact on profitability metrics from deviations in assumptions” with “conduct a risk evaluation.”
Response	The reviewers made changes consistent with the comment.
Comment	One commentator suggested including “the impact of product design features” in addition to risk mitigation strategies in the last paragraph.
Response	The reviewers believe that the existing reference to product design features in section 3.4.4(g) (now section 3.4.4[f]) already addresses the comment. Therefore, the reviewers made no change.
Section 3.5.1, Cost of Capital (deleted)	
Comment	One commentator asked for clarification of “Cost of Capital,” because “Cost of Capital” could be the hurdle rate, which is the estimated minimum required rate given the level of risk, and it is usually determined by a company’s Treasury department. The commentator also said that “Cost of Capital” in the draft guidance might be interpreted as the required capital amount.
Response	The reviewers eliminated the term “cost of capital” throughout the ASOP. The concept of cost of capital was moved from section 3.5.1 to section 3.1.1(c).
Comment	One commentator suggested that Cost of Capital may fit better under “Initial Pricing Considerations.”
Response	The reviewers agree and moved the section to section 3.1.1(c).
Comment	One commentator stated that the three uses of “profitability metrics” in this section description contributed to confusion about whether metrics are a measurement basis or a number, and suggested replacing “profitability metrics” with “profitability targets.”
Response	The reviewers agree and revised sections 3.5 and 3.5.1 (now section 3.1.1[c]) to eliminate the use of “profitability metrics” and replaced “metrics” with “results” in section 3.5.3 (now section 3.5.2).
Section 3.5.2, Sensitivity Analysis (now section 3.5.1)	
Comment	One reviewer suggested that sensitivity analysis should not be required.
Response	The reviewers disagree and therefore made no change.

Section 3.5.3, Stochastic Analysis (now section 3.5.2)	
Comment	One commentator suggested deleting the phrase “the level of” in the last sentence.
Response	The reviewers revised the language to address the commentator’s concern.
Suggested Addition: Section 3.5.4, Risk Identification and Classification	
Comment	One commentator suggested adding a risk evaluation technique, “Risk Identification and Classification - The actuary should consider identifying the types of risk in the product and classifying them (for example, high, medium, or low).”
Response	The reviewers believe that this type of exercise is outside the scope of the ASOP, and therefore did not make the change.
Section 3.6, Governance and Controls	
Comment	One commentator said that the language used in the second sentence may imply that the list of governance and controls are requirements and suggested changing the sentence to “examples of governance and controls may include the following.”
Response	The reviewers clarified the language by adding the word “possible” before “governance and controls” and eliminating the phrase “but are not limited to.”
Comment	One commentator suggested replacing “the product’s expected impact on the company’s future financial and risk position” with “the future financial impact of the product,” noting that in practice, pricing is done on a standalone product basis, rather than on a portfolio basis. The process of considering the impact on the company’s financials and risk profile can be part of the forecasting and Enterprise Risk Management process rather than a pricing exercise.
Response	The reviewers agree and made the change, but also added the word “expected” before “future financial impact.”
Comment	One commentator suggested that documenting the governance and controls in pricing is a reasonable requirement and recommended replacing the phrase “should consider” with “should.”
Response	The reviewers agree and made the change.
Comment	One commentator sought clarification for item (c), “separation of duties.”
Response	The reviewers deleted “separation of duties” from the list of examples because the phrase could be a component of each of the other examples.
Comment	One commentator suggested adding “another” before the words “knowledgeable party.”
Response	The reviewers agree and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communications	
Comment	One commentator suggested documenting in the actuarial report the competitive analysis that was used in the pricing analysis.
Response	The reviewers believe the comment is addressed in the revised section 4.1(a), “relevant characteristics of the product, as described in section 3.1.2.”
Comment	One commentator suggested replacing “profitability metrics used to evaluate profitability” with “profitability metrics used in the profitability analysis.”
Response	The reviewers agree and made the change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 55**

Capital Adequacy Assessment

**Developed by the
Enterprise Risk Management Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
June 2019**

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June 2019

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Capital Adequacy Assessment

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 55, *Capital Adequacy Assessment*

This document contains ASOP No. 55, *Capital Adequacy Assessment*.

History of the Standard

When the ASB’s Enterprise Risk Management (ERM) Task Force (now Committee) started work on ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, and ASOP No. 47, *Risk Treatment in Enterprise Risk Management*, it was intended that those standards would, in addition to providing general guidance to actuaries performing ERM work, provide support as building blocks for a standard on actuarial opinions regarding the still-developing own risk and solvency assessment (ORSA) process.

Starting in 2012, insurance regulators began implementing the ORSA process throughout the world. Specifically, the ORSA process is a part of the Insurance Core Principles (ICP) set out by the International Association of Insurance Supervisors (IAIS) and is required by the NAIC accreditation standards. A key feature of ORSA is that it requires a formal assessment of capital adequacy be a part of an insurer’s ERM program. However, what is included in a capital adequacy assessment varies significantly across the industry. Given the disparity in current practices, the ASB determined that a separate ASOP covering capital adequacy assessments was needed to supplement ASOP Nos. 46 and 47.

In addition to satisfying regulatory requirements, risk-taking enterprises will, on occasion, want to assess their capital adequacy. The purpose of this proposed standard is to provide additional guidance to actuaries preparing an assessment of capital adequacy, whether for a specific regulatory requirement or for general management purposes.

First Exposure Draft

The ASB issued a first exposure draft of this ASOP in September 2016 with a comment deadline of January 31, 2017. Nine comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The ASB issued a second exposure draft in September 2017 with a comment deadline of March 1, 2018. Nine comment letters were received and considered in making changes that were reflected in the third exposure draft.

Third Exposure Draft

The ASB issued a third exposure draft in November 2018 with a comment deadline of March 1, 2019. Four comment letters were received and considered in making changes that were reflected in this ASOP. For a summary of the issues contained in these comment letters, please see appendix 2.

Notable Changes from the Third Exposure Draft

There were no notable changes from the third exposure draft. Certain changes were made to improve readability, clarity, or consistency.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The ASB voted in June 2019 to adopt this standard.

ASOP No. 55—Doc. No. 194

ERM Committee of the ASB

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE No. 55

CAPITAL ADEQUACY ASSESSMENT

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing professional services with respect to an evaluation of the resiliency of an insurer through a **capital adequacy assessment**.
- 1.2 **Scope**—This standard applies to actuaries involved in **capital adequacy assessment** work for life or health insurers (including fraternal benefit societies and health benefit plans), property and casualty insurers, mortgage and title insurers, financial guaranty insurance companies, risk retention groups, public entity pools, captive insurers, and similar entities or a combination of such entities, when affiliated (collectively, referred to as “insurer”). The term insurer includes entities that insure or reinsurance any entity mentioned in the preceding sentence. For the purposes of this standard, if an actuary is asked to assess the **capital** needed to support self-insured obligations of the types of insurance written by the businesses listed in the first sentence, the term “insurer” includes such self-insured obligations.

This standard applies to actuaries designing, performing, or reviewing a **capital adequacy assessment**.

If the actuary’s actuarial services involve reviewing a **capital adequacy assessment**, the reviewing actuary should be reasonably satisfied that the **capital adequacy assessment** was performed in accordance with this standard. The reviewing actuary should use the guidance in this standard to the extent practicable within the scope of the actuary’s assignment.

When designing, performing, or reviewing a **capital adequacy assessment** of a **group**, the actuary need not assess the **capital** of individual members of the **group** unless warranted by the specific circumstances of the **group**.

This standard does not apply to actuaries when providing actuarial services within the scope of ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4. If a conflict

exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This standard is effective for work commenced on or after November 1, 2019.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Adverse Capital Event**—A modeled or actual event that either a) causes **capital** to be significantly less than the **risk capital target(s)** or b) causes **capital** to be less than the **risk capital threshold(s)**.
- 2.2 **Capital**—The excess of the value of assets over the value of liabilities, which depends on the **valuation basis** chosen.
- 2.3 **Capital Adequacy Assessment**—An assessment of **capital** of an insurer relative to its **risk capital target(s)** or **risk capital threshold(s)**.
- 2.4 **Group**—Affiliated group of individual entities, of which at least one is an insurer.
- 2.5 **Risk Appetite**—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.
- 2.6 **Risk Capital Target**—The preferred level of **capital** based on specified criteria, which is expressed as a function of a measure of risk. A **risk capital target** can be a single value or a range. There may be multiple **risk capital targets** based on different risk metrics at any one time. A **risk capital target** is aligned with the insurer's **risk tolerance** and may include individual company, regulatory, and rating agency developed targets.
- 2.7 **Risk Capital Threshold**—The minimum level of **capital** necessary for an entity to operate effectively based on specified criteria and expressed as a function of a measure of risk. There may be multiple **risk capital thresholds** based on different risk metrics at any one time. A **risk capital threshold** is aligned with the insurer's **risk tolerance** and may include individual company, regulatory, and rating agency developed thresholds or targets.

- 2.8 **Risk Profile**—The risks to which an organization is exposed over a specified period of time.
- 2.9 **Risk Tolerance**—The aggregate risk-taking capacity of an organization.
- 2.10 **Valuation Basis**—An accounting or economic framework for the recognition and measurement of assets and liabilities.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **General Considerations**—In designing, performing, or reviewing a **capital adequacy assessment**, the actuary should take into account the following:
- a. the insurer's **risk profile** and **capital**;
 - b. the business and risk drivers, including the legal, tax, regulatory, and economic environments in which the insurer operates, as well as any past and anticipated changes or trends in those drivers;
 - c. the insurer's plans and strategies and the likelihood of their successful execution;
 - d. the timing and variability of projected liability-related and asset-related cash flows (commonly the basis of a liquidity analysis), reflecting the marketability and availability of assets and other financial resources including reinsurance;
 - e. the timing and intensity of future calls on **capital** and the means and ability to replenish **capital** in a timely manner;
 - f. existing or accessible resources, including those from affiliated entities as well as the capabilities of the insurer and affiliated entities to use these resources. Examples of resources may include **capital**, data, computing power and storage, and human resources;
 - g. the effect on capital adequacy of changes, or projected changes, in the **risk profile**;
 - h. correlation of risks and events, concentration of exposures, diversification benefits, and the uncertainty of the interdependence between risks;
 - i. projections of future economic conditions;
 - j. parameter uncertainty; and
 - k. the methodology used to assess the adequacy of **capital** consistent with the scope of the actuary's assignment.

3.2 **Additional General Considerations**—In designing, performing, or reviewing a **capital adequacy assessment**, the actuary should consider the following:

- a. the insurer's definition of risk, the primary risk metric(s) used in the risk management system of the insurer, the risk identification process, the risks identified by the insurer, relevant management risk reports, and the limitations of the analytical tools and processes that will be used by the insurer to evaluate and quantify each risk;
- b. the insurer's **risk appetite** and **risk tolerance**, including any conflicts between the **risk profile** and the **risk appetite** and how the **risk appetite** and **risk profile** are expected to change over time;
- c. inconsistencies between the **capital adequacy assessment** and information contained in publicly released reports the actuary considers relevant, such as annual statements and SEC filings, and the rationale for any inconsistencies;
- d. prior **capital adequacy assessments**, including underlying assumptions;
- e. if the insurer is part of a **group**, or the assessment is of a **group**:
 1. access to **capital** from the entities in the **group**;
 2. **intra-group** transactions, including, for example, dividends, reinsurance, and guarantees;
 3. transfers of risks from the **group** to each individual entity, for example, reinsurance with aggregates or limits on a multi-company basis; and
 4. transfers of risks from each entity to the **group** and the degree to which the **group** manages capital adequacy for each individual entity or primarily at the **group** level; and
- f. management actions, including whether they can be executed in a timely manner (see section 3.7).

3.3 **Valuation Bases Underlying a Capital Adequacy Assessment**—When designing or reviewing a **capital adequacy assessment**, the actuary should review the selected **valuation bases** for assets and liabilities to determine whether they are consistent with and appropriate for the intended use of the **capital adequacy assessment**. When doing so, the actuary should consider the following:

- a. criteria used by management for making risk and other financial decisions;
- b. any differences between the selected **valuation bases** and any mandated (for

- example, by regulators, accountants, or others) **valuation bases**;
- c. the time horizon(s) considered by management in decision-making;
 - d. the characteristics and implications of the selected **valuation bases**; and
 - e. any restrictions on assets or **capital** that are not otherwise reflected in the **valuation bases**.
- 3.4 Risk Capital Target or Risk Capital Threshold—When the actuary assists in the design of or the review of the appropriateness or applicability of **risk capital target(s)** or **risk capital threshold(s)**, the actuary should take into account the following (on a historical, current, and prospective basis, as appropriate):
- a. the **valuation bases**;
 - b. the principal's objectives for **capital** (such as maintaining minimum ratios of regulatory or rating agency capital, insurer stability, acquisition plans, new business, or infrastructure investment) and reasons they could change;
 - c. normal and adverse environments;
 - d. the time horizon over which the **capital** is assessed;
 - e. the methods used to aggregate results, including diversification benefits and the uncertainty of the interdependence among the risks; and
 - f. alignment with any existing **risk appetite** and **risk tolerance**.
- 3.5 Additional Considerations Regarding Risk Capital Target or Risk Capital Threshold—When the actuary assists in the design of or the review of the appropriateness or applicability of **risk capital target(s)** or **risk capital threshold(s)**, the actuary should consider the following:
- a. the approach used to determine the “sufficient” level of **capital** (such as models based on factors, historical averages, and economic capital), as well as the uncertainty inherent in the approach;
 - b. the relative merits of using a range for the **risk capital targets** versus a single number;
 - c. whether the insurer will be able to access additional **capital** if and when needed, including the availability and sources of **capital** within the **group** when the insurer is part of a **group**;
 - d. the **risk capital targets** or **risk capital thresholds** that are in use within the

- group**, if applicable; and
- e. the relationship of **risk capital targets** or **risk capital thresholds** established by management to the current **capital** and risks of the insurer.
- 3.6 **Scenario Tests and Stress Tests**—When scenario tests and stress tests are included in a **capital adequacy assessment**, the actuary should follow applicable guidance for scenario testing and stress testing in ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, and ASOP No. 47, *Risk Treatment in Enterprise Risk Management*. In addition, the actuary should consider the following:
- 3.6.1 **Types of Tests**—One or more forms of scenario tests or stress tests such as the following:
- a. Deterministic—Tests to challenge the insurer in specific ways based on its unique exposures. For example, emerging risks may be considered using deterministic stress tests;
 - b. Stochastic—Tests chosen from one or more sets of stochastically generated scenarios;
 - c. Combination—Tests where multiple events happen simultaneously or sequentially; and
 - d. Reverse—Reverse-engineered tests that create an **adverse capital event**.
- 3.6.2 **Level of Adversity**—Different levels of adversity such as the following:
- a. periods of normal volatility;
 - b. plausible adverse conditions; and
 - c. tail events.
- 3.6.3 **Sensitivity Testing**—The actuary may use sensitivity testing as part of a **capital adequacy assessment**. For example, sensitivity testing can be used to determine the applicability of the results of the scenario tests and stress tests under changing conditions, including the passage of time, as well as testing the materiality or impact of different assumptions, including stochastic model assumptions.
- 3.7 **Incorporating Management Actions**—When management actions are incorporated into a **capital adequacy assessment**, the actuary should consider the following:
- a. effectiveness and applicability of prior management actions, given changes between when such actions were taken and the projection period, for example:

1. the magnitude of the impact of the prior action compared with the impact needed in the projection;
 2. the differences in risk environment, including differences in the insurer's business and operations, and the legal and regulatory environment;
 3. differences in the insurer's enterprise risk management program and **risk profile**; and
 4. differences in the insurer's financial strength;
- b. feedback from board members or management;
 - c. legal, regulatory, and execution timing requirements;
 - d. experience, if available, of other insurers and non-insurance entities who took similar actions; and
 - e. expected reactions of regulators and other stakeholders.
- 3.8 **Insurers That Operate under More Than One Regulatory Regime**—When the actuary is designing, performing, or reviewing a **capital adequacy assessment** of an insurer that individually or as part of a **group** operates under more than one regulatory regime, the actuary should take into account the following factors:
- a. different regulatory regimes that might apply to different parts of the insurer or different entities (including non-insurance entities) of the **group**, including:
 1. cooperation and existence or non-existence of memorandums of understanding between regulators;
 2. differing requirements for **capital**, scenario and stress tests, and financial reporting structures;
 3. expected regulatory changes;
 4. differing amounts of regulatory oversight;
 5. impact of rules, restrictions, and time-lags on **capital** availability;
 6. differing definitions of “insurance company” and “regulated entity”; and
 7. differing **valuation bases**; and
 - b. variations in taxation and approaches to litigation in various regulatory regimes.

- 3.9 **Additional Considerations Regarding Insurers That Are Part of a Group**—When the actuary is designing, performing, or reviewing a **capital adequacy assessment** of an insurer that is part of a **group**, or the assessment is of a **group**, the actuary should consider the following, if applicable:
- a. level of complexity and extent of information available across all entities in the **group**;
 - b. levels of autonomy in selecting **capital** strategies for individual entities within the **group**; and
 - c. the impact of varying ownership interests, including the following:
 1. ownership splits, particularly between customers and shareholders;
 2. shares listed on multiple stock exchanges; and
 3. ownership concentrations.
- 3.10 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to the following ASOPs for guidance: ASOP No. 23, *Data Quality*; ASOP No. 41, *Actuarial Communications*; and, if applicable, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*. When relying on projections or supporting analysis supplied by others, the actuary should disclose the fact and the extent of such reliance.
- 3.11 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. When preparing such documentation, the actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work or could assume the assignment if necessary. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41, section 3.8, for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report to which this standard applies, the actuary should refer to ASOP Nos. 23, 41, 46, 47, and, if applicable, 38. In addition, the actuary should disclose the following in such actuarial reports, if applicable:

- a. the businesses (insurance or non-insurance) that are included or excluded (and reasons for exclusion) in the assessment;
 - b. the key current and future business and risk drivers, including the legal, tax, regulatory, and economic environments in which the insurer operates (see section 3.1[b]);
 - c. the key elements of business and risk management plans and strategies included in the **capital adequacy assessment** (see section 3.1[c]);
 - d. how the timing and variability of projected liability-related and asset-related cash flows were taken into account (see section 3.1[d]);
 - e. how future calls on **capital**, and the insurer's means and ability to replenish **capital** were taken into account (see section 3.1[e]);
 - f. how correlation of risks and events, concentration of exposures, diversification benefits, and the uncertainty of the interdependence between risks were taken into account (see section 3.1[h]);
 - g. the basis for projections of future economic conditions (see section 3.1[i]); and
 - h. the selected valuation bases for assets and liabilities, and why they are appropriate (see section 3.3).
- 4.2 Additional Disclosures in an Actuarial Report—The actuary should include the following disclosures, when applicable, in an actuarial report:
- a. the extent to which information regarding prior sources of **capital** was reflected in the **capital adequacy assessment**, including any reasons for deviations from past trends in such sources and uses, if such information was available;
 - b. how the insurer's risk management practices or processes, or the insurer's **risk profile**, **risk appetite**, or **risk tolerance** were reflected in the assumptions or methodology underlying the **capital adequacy assessment**, if they were material to the **capital adequacy assessment** (see sections 3.2[a] and 3.2[b]);
 - c. any material differences between a prior **capital adequacy assessment** or relevant publicly available or internal reports and analyses and the assumptions underlying the **capital adequacy assessment**, if the actuary had access to such assessment or reports and analyses (see sections 3.2[c] and 3.2[d]);
 - d. whether the actuary has considered any **capital adequacy assessments** performed at the **group** level and how that information has been used, and describe how being part of the **group** is reflected in the **capital adequacy assessment**, if the insurer is a part of a **group** (see sections 3.2[e] and 3.9);

- e. a description of specific management actions, their impact on the **capital adequacy assessment**, and whether the actions could be effectively implemented in a timely manner, if the **capital adequacy assessment** reflects such actions (see sections 3.2[f] and 3.7);
- f. the actuary's role and the rationale underlying the design or the results of the actuary's review, if the actuary had a role in the design of or reviewed the **risk capital targets** or **risk capital thresholds** (see sections 3.4 and 3.5);
- g. a summary of the tests, including the type and levels of adversity, and the results of the tests, if scenario or stress tests are part of the **capital adequacy assessment** (see section 3.6);
- h. a description of how operating under more than one regulatory regime is reflected in the **capital adequacy assessment**, if the insurer operates, either individually or as part of a **group**, under more than one regulatory regime (see section 3.8);
- i. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law;
- j. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
- k. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Enterprise risk management (ERM) has been the focus of the insurance industry, including insurers, regulators, and rating agencies, for some time. In response to this increased attention to ERM, the Actuarial Standards Board (ASB) created the ERM Task Force (now Committee), which developed ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*, and ASOP No. 47, *Risk Treatment in Enterprise Risk Management*. These two ASOPs provide guidance to the actuary for overall ERM work.

Historically, most insurers did not undertake formal assessments of capital adequacy. Instead, they tended to use rules of thumb (for example, premium to surplus ratios) or relied on regulatory rules (for example, risk-based capital ratios) or rating agencies (for example, A. M. Best's Capital Adequacy Ratio). Many companies also relied on stress tests or what-if analyses to assess capital levels. Insurance regulators designed deterministic stress tests that reflected potential experience beyond the range of an insurer's normal operations. Over time, deterministic stress tests were developed for a wide variety of assumptions.

Starting in 2012, insurance regulators began implementing the own risk and solvency assessment (ORSA) process throughout the world. Specifically, the ORSA process is required by the NAIC accreditation standards and is a part of the Insurance Core Principles (ICP 16) set out by the International Association of Insurance Supervisors (IAIS). A key feature of ORSA is that it requires a formal assessment of capital adequacy to be a part of an insurer's ERM program.

Current Practices

Given the new ORSA requirements and the increasing demands from regulators, rating agencies, and other external stakeholders, insurers are under pressure to perform formal, more sophisticated capital adequacy assessments. These formal capital adequacy assessments typically involve considerations of complex contingencies in determining the impact of adverse experience on the insurer and its capital adequacy, usually involving actuaries in some or all of the assessment process.

Company practice in making these assessments varies significantly. Some companies have created their own stochastic models (or use commercially available software) that simulate underwriting results across all lines of business and geographies, as well as economic conditions and investment results. These models typically incorporate the insurer's strategic plan and may include complicated feedback loops that reflect management's responses, if any, to specific situations (for example, underwriting results, a recession, multiple catastrophic events, a

pandemic). They may also include predictions of how regulators and rating agencies may react to changes in the financial condition of the insurer. Other models may analyze capital adequacy at very high levels of aggregation and have limited or no feedback loops (i.e., they analyze specific management actions one at a time).

Larger insurers may have whole departments focused on analyzing the global economy. For smaller insurers, this work may be tasked to a specific individual or may be outsourced to consultants. In many of these insurers, actuaries and non-actuaries are involved in these analyses and the building of the models.

Rating agencies and regulators are concerned with individual company and group-wide capital adequacy. Many insurers are part of complex, multinational organizations (including insurers and non-insurers) that span many different accounting, financial, and regulatory regimes. The relationships among the members of a group and the differences among these regimes can have a significant impact on capital adequacy and the group's ability to fulfill its promises to its customers. In most countries, ORSA requires groups operating in multiple countries to perform a group-wide assessment of their capital adequacy across all jurisdictions.

Appendix 2

Comments on the Third Exposure Draft and Responses

The third exposure draft of this ASOP, *Capital Adequacy Assessment*, was issued in November 2018 with a comment deadline of March 1, 2019. Four comment letters were received. The Enterprise Risk Management Committee carefully considered all comments received, reviewed the third exposure draft, and proposed changes. The ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” in appendix 2 includes the Enterprise Risk Management Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the third exposure draft.

GENERAL COMMENTS	
Comment	One commentator wanted to clarify that the insurer’s actual capital is not part of the assessment but is just compared to the needed capital.
Response	The reviewers believe that the standard is appropriate and therefore made no change.
SECTION 2. DEFINITIONS	
Section 2.5, Risk Appetite	
Comment	One commentator said that the definitions of “risk tolerance” and “risk appetite” were unclear and wanted examples added to clarify these terms.
Response	The reviewers note that the definitions are consistent with the definitions in ASOP No. 46, <i>Risk Evaluation in Enterprise Risk Management</i> , and ASOP No. 47, <i>Risk Treatment in Enterprise Risk Management</i> , and are appropriate for this ASOP, and therefore made no change.
Sections 2.6 and 2.7, Risk Capital Target and Risk Capital Threshold	
Comment	One commentator didn’t understand how “risk capital threshold” and “risk capital targets” were functions of “risk tolerance.” In addition, the same commentator didn’t see the need for both “risk capital targets” and “risk capital thresholds.”
Response	The reviewers agree the definitions need to be clarified regarding risk tolerance and made changes. The reviewers believe that using both “risk capital targets” and “risk capital thresholds” is appropriate and made no changes in this regard.
Section 2.7, Risk Capital Threshold	
Comment	One commentator said that a “risk capital threshold” was not always a function of “risk tolerance.”
Response	The reviewers agree the definition needs to be clarified regarding risk tolerance and made changes.
Section 2.9, Risk Tolerance	
Comment	One commentator said defining “risk tolerance” in terms of “capacity” was inappropriate and suggested an alternative definition.

Response	The reviewers note that the definitions are consistent with the definitions in ASOP Nos. 46 and 47 and are appropriate for this ASOP, and therefore made no change.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1(f), General Considerations	
Comment	One commentator said that the list of “resources” in this section was too broad and the disclosure requirements might force an actuary to reveal confidential insurer information.
Response	The reviewers believe the guidance is appropriate but clarified the language to indicate that the list provides examples of resources.
Comment	One commentator said that availability of capital within a group did not necessarily mean the insurer could get the capital when needed.
Response	The reviewers agree and changed “available resources” to “accessible resources.”
Comment	One commentator said that the actuary needed to evaluate fungibility and frictional costs of transferring assets when doing a group capital assessment.
Response	The reviewers made a change from “available” to “accessible” to address the issue of fungibility but believe that the current guidance is otherwise sufficient.
Section 3.2(e)(1), Additional General Considerations	
Comment	One commentator suggested reviewing this section in light of any changes made in section 3.1(f) regarding the availability of capital.
Response	The reviewers believe the guidance in this section is sufficient and made no change.
Section 3.5(e), Additional Considerations Regarding Risk Capital Target or Risk Capital Threshold	
Comment	One commentator said that “regulators” in the parenthetical remark was redundant, as “regulators” were referenced explicitly later in the sentence.
Response	The reviewers modified the language.
Section 3.6.1(b), Stochastic	
Comment	One commentator said that contexts or sources should be provided for the types of stress tests used by the actuary.
Response	The reviewers believe that this concern is appropriately covered by the disclosure requirement in section 4.2(g) and made no change.
Section 3.6.2(c), Combination	
Comment	One commentator said that the requirement to consider “extremely unlikely catastrophic events” is too open-ended and may require the actuary to consider unreasonably severe events.
Response	The reviewers modified the language to “tail events.”
Section 3.7, Incorporating Management Actions	
Comment	One commentator was concerned that the requirement to consider past management actions had no time limit.
Response	The reviewers believe the current guidance is appropriate and therefore made no change.

Comment	One commentator said that management actions should include an insurer's internal allocation of capital.
Response	The reviewers believe the internal allocation of capital is beyond the scope of this standard and therefore made no change.
Section 3.8, Insurers That Operate in Multiple Jurisdictions (now Insurers That Operate under More Than One Regulatory Regime)	
Comment	One commentator questioned whether considering "variations in taxation" might require the actuary to assess capital on both a pre- and post-tax basis.
Response	The reviewers believe the guidance is appropriate and therefore made no change.
Comment	One commentator said that "multiple jurisdictions" should be changed to "multiple regulatory regimes" because there may be multiple regulatory regimes within the same jurisdiction.
Response	The reviewers agree and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication (now Required Disclosures in an Actuarial Report)	
Comment	One commentator said the requirement to "disclose ... a discussion" was unclear and awkward.
Response	The reviewers agree and made changes to sections 4.1 (d), (e), and (h).
Section 4.2(a), Additional Disclosures in an Actuarial Report	
Comment	One commentator thought the standard required disclosure of all information whenever available, whether relevant to the current capital assessment or not, and recommended adding "and relevant" to 4.2 so it says, "as applicable and relevant."
Response	The reviewers believe the current guidance is appropriate and made no change.
Section 4.2(c), Additional Disclosures in an Actuarial Report	
Comment	One commentator thought there was a conflict between the introductory paragraph that says, "as applicable" and section 4.2 (c) that requires disclosure if the actuary had access to prior assessments.
Response	The reviewers believe the current wording is clear and therefore made no change.
Section 4.2(d), Additional Disclosures in an Actuarial Report	
Comment	One commentator said that requiring the actuary to disclose whether he or she had considered a group capital assessment might raise red flags about the group when the actuary does not consider the group assessment.
Response	The reviewers believe the current language is appropriate and made no change.



ACTUARIAL STANDARDS BOARD

**Actuarial Standard
of Practice
No. 56**

Modeling

**Developed by the
Modeling Task Force of the
General Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
December 2019**

Doc. No. 195

ASOP No. 56—Doc. No. 195

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December 2019

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Modeling

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 56

This document contains ASOP No. 56, *Modeling*.

History of the Standard

The ASB first began work on a standard for modeling in the late 1990s. Motivated primarily to address the role catastrophe modeling of earthquakes and hurricanes played in casualty ratemaking, this work was focused on the use of specialized models where actuaries would have to rely on a model that was developed by professionals other than actuaries. As a result of this work, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise*, was approved by the ASB in June of 2000 with the scope of the standard limited to the Property/Casualty area of practice. Historically, ASOP No. 38 had been the only ASOP that specifically addressed modeling.

Recently, the number and importance of modeling applications in actuarial science have increased, with the results of actuarial models sometimes being reflected in financial statements.

Recognizing this trend, the ASB asked the Life Committee in 2010 to begin work on an ASOP focused on modeling. The Life Committee formed a task force to address this issue and, in February of 2012, a discussion draft titled *Modeling in Life Insurance and Annuities* was released and nineteen comment letters were received. The transmittal letter also mentioned that the scope might be expanded to all practice areas and asked for comments on this idea.

Based upon the feedback received, and numerous other discussions on the topic of modeling, in December of 2012 the ASB created two multi-disciplinary task forces under the direction of the General Committee: i) a general Modeling Task Force, charged with developing an ASOP to address modeling applications in all practice areas, and ii) a Catastrophe Modeling Task Force to consider expanding ASOP No. 38 to all practice areas while focusing exclusively on using catastrophe models. The membership of these task forces has experience in all actuarial practice areas, including enterprise risk management.

First Exposure Draft

The first exposure draft was released in June 2013 with a comment deadline of September 30, 2013. Forty-eight comment letters were received and considered in making changes that were reflected in the second exposure draft.

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Second Exposure Draft

A second exposure draft was released in November 2014 with a comment deadline of March 1, 2015. Thirty-seven comment letters were received and considered in making changes that were reflected in the third exposure draft.

Third Exposure Draft

A third exposure draft was released in June 2016 with a comment deadline of October 31, 2016. Twenty-eight comment letters were received and considered in making changes that were reflected in the fourth exposure draft.

Fourth Exposure Draft

A fourth exposure draft was released in December 2018 with a comment deadline of May 15, 2019. Twenty-six comment letters were received and considered in making changes that were reflected in this final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2.

Notable Changes from the Fourth Exposure Draft

Notable changes made to the fourth exposure draft are summarized below. Additional changes were made to improve readability, clarity, or consistency.

1. Section 3.1.6(b), Margins, was deleted because it did not provide sufficiently clear guidance. While margins are appropriately used, or even required, for certain intended purposes, margins are inappropriate and not used for other intended purposes.
2. “Hold-out data” in predictive modeling was defined and added to the list of items that may be included in the model output validation in section 3.6.2(b).
3. The term “parameter” was eliminated from section 3 of the ASOP, referencing it only within the definition of “assumption” because the two terms often are synonymous and the guidance often was identical.

As a next step, the ASB will review the previously approved but pending ASOP No. 38, *Catastrophe Modeling (for All Practice Areas)*, for any changes necessitated by this ASOP and take appropriate action.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

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The ASB also thanks former task force member Aaron R. Weindling for his assistance during the earlier drafting of this standard.

The ASB voted in December 2019 to adopt this standard.

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The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

ACTUARIAL STANDARD OF PRACTICE NO. 56

MODELING

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating **models**.
- 1.2 **Scope**—This standard applies to actuaries in any practice area when performing actuarial services with respect to designing, developing, selecting, modifying, or using all types of **models**. For example, an actuary using a **model** developed by others in which the actuary is responsible for the **model output** is subject to this standard.

If the actuary's actuarial services involve reviewing or evaluating **models**, the reviewing or evaluating actuary should be reasonably satisfied that the actuarial services were performed in accordance with this standard. The reviewing or evaluating actuary should apply the guidance in this standard to the extent practicable within the scope of the actuary's assignment.

The guidance in this ASOP applies to the actuary when, in the actuary's professional judgment, reliance by the **intended user** on the **model output** has a material effect for the **intended user**. This judgment should be made within the context of the use of the **model output** and the needs of the **intended user**, based on facts known by the actuary at the time the actuarial services are performed. For example, actuarial services performed in relation to pension plan contribution and cost projection **models**, insurance pricing **models**, predictive **models**, reserving **models**, and insurance company financial planning **models** may require application of the guidance in this ASOP. In assessing materiality, the actuary should be guided by ASOP No. 1, *Introductory Actuarial Standard of Practice*, section 2.6.

The guidance in this ASOP does not apply to the actuary when performing services with respect to individual pension benefit calculations and nondiscrimination testing, as described in section 1.2 of ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*.

This standard only applies to the extent of the actuary's responsibilities. The actuary's responsibilities may extend to performing actuarial services related to an entire **model** or to only a small portion of a **model**.

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Other ASOPs may provide guidance for actuarial services that involve **models**. If the actuary determines that the guidance from another ASOP conflicts with the guidance of this ASOP, the guidance of the other ASOP will govern.

If the actuary departs from the guidance set forth in this ASOP in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason, the actuary should refer to section 4. If a conflict exists between this standard and applicable law, the actuary should comply with applicable law.

- 1.3 **Cross References**—When this ASOP refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this ASOP to the extent it is applicable and appropriate.
- 1.4 **Effective Date**—This ASOP is effective for work performed on or after October 1, 2020.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice and appear in bold throughout the ASOP.

- 2.1 **Assumption**—A type of explicit **input** to a **model** that is derived from **data**, represents possibilities based on professional judgment, or may be prescribed by law or by others. When derived from **data**, an **assumption** may be statistical, financial, economic, mathematical, or scientific in nature, and may be described as a **parameter**.
- 2.2 **Data**—Facts or information that are either direct **input** to a **model** or inform the selection of **input**. **Data** may be collected from sources such as records, experience, experiments, surveys, observations, benefit plan or policy provisions, or **output** from other **models**.
- 2.3 **Governance and Controls**—The application of a set of procedures and an organizational structure designed to reduce the risk that the **model output** is not reliably calculated or not utilized as intended.
- 2.4 **Hold-out Data**—A subset of **data** that is withheld intentionally when developing a predictive **model** so that the **model** may be validated later with **data** that were not used to develop the **model**.
- 2.5 **Input**—**Data** or **assumptions** used in a **model** to produce **output**.
- 2.6 **Intended Purpose**—The goal or question, whether generalized or specific, addressed by the **model** within the context of the assignment.

- 2.7 **Intended User**—Any person whom the actuary identifies as able to rely on the **model output**.
- 2.8 **Model**—A simplified representation of relationships among real world variables, entities, or events using statistical, financial, economic, mathematical, non-quantitative, or scientific concepts and equations. A **model** consists of three components: an information **input** component, which delivers **data** and **assumptions** to the **model**; a processing component, which transforms **input** into **output**; and a results component, which translates the **output** into useful business information.
- 2.9 **Model Risk**—The risk of adverse consequences resulting from reliance on a **model** that does not adequately represent that which is being modeled, or the risk of misuse or misinterpretation.
- 2.10 **Model Run**—The process of transforming a particular set of **input** to a particular set of **output** in a **model**. A **model run** could include the whole transformation process or part of the process, as applicable.
- 2.11 **Output**—The results of a **model** including, but not limited to, point estimates, likely or possible ranges, **data** or **assumptions** (as **input** for other **models**), behavioral expectations, or qualitative criteria on which decisions could be made.
- 2.12 **Overfitting**—A situation where a **model** fits the **data** used to develop the **model** so closely that prediction accuracy materially decreases when the **model** is applied to different **data**.
- 2.13 **Parameter**—A type of statistical, financial, economic, mathematical, or scientific value that is used as **input** to certain types of **models**. Examples of **parameters** include expected values in probability distributions and coefficients of formula variables. Some types of **models**, such as predictive or statistical **models**, produce estimates of **parameters** as **output**, which may be used as **input** to other **models**.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Model Meeting the Intended Purpose**—The actuary should understand the **model's intended purpose**.
- 3.1.1 **Designing, Developing, or Modifying the Model**—When the actuary designs, develops, or modifies the **model**, the actuary should confirm, in the actuary's professional judgment, that the capability of the **model** is consistent with the **intended purpose**. Items the actuary should consider, if applicable, include but are not limited to the following:
- a. the level of detail built into a **model**;

- b. the dependencies recognized; and
 - c. the **model's** ability to identify possible volatility of **output**, such as volatility around expected values.
- 3.1.2 **Selecting, Reviewing, or Evaluating the Model**—When selecting, reviewing, or evaluating the **model**, the actuary should confirm that, in the actuary's professional judgment, the **model** reasonably meets the **intended purpose**.
- 3.1.3 **Using the Model**—When using the **model**, the actuary should make reasonable efforts to confirm that the model structure, **data**, **assumptions**, **governance and controls**, and **model** testing and **output** validation are consistent with the **intended purpose**.
- 3.1.4 **Model Structure**—The actuary should assess whether the structure of the **model** (including judgments reflected in the **model**) is appropriate for the **intended purpose**. The actuary should consider the following, as applicable, for a particular **model**:
- a. which provisions and risks specific to a business segment, contract, or plan, if any, or interactions more broadly, are material and appropriate to reflect in the **model**;
 - b. whether the form of the **model** is appropriate, such as a projection **model** (deterministic or stochastic), statistical **model**, or predictive **model**;
 - c. whether the use of the **model** dictates a particular level of detail, for example, whether grouping **inputs** will produce reasonable **output**, or whether a certain level of detail in the **output** is needed to meet the **intended purpose**;
 - d. whether there is a material risk of the **model overfitting** the **data**; and
 - e. whether the **model** appropriately represents options, if any, that could be reasonably expected to have a material effect on the **output** of the **model**. Examples include call options on fixed income assets, policyholder surrender options, and early retirement options.
- 3.1.5 **Data**—The actuary should use, or confirm use of, **data** appropriate for the **model's intended purpose** and should refer, as applicable, to ASOP No. 23, *Data Quality*, when selecting, reviewing, or evaluating **data** used in the **model**, either directly or as the basis for deriving, estimating, or testing **assumptions** used in the **model**.
- 3.1.6 **Assumptions Used As Input**—For **models** that use **assumptions** as **input**, the actuary should use, or confirm use of, **assumptions** that are appropriate given the

model's intended purpose. The following guidance applies for **models** that use **assumptions** as **input**:

- a. **Setting Assumptions**—When setting **assumptions** for which the actuary is taking responsibility, the actuary should consider using the following **data** or information:
 1. actual experience properly modified to reflect the circumstances being modeled, to the extent actual experience is available, relevant, and sufficiently reliable;
 2. other relevant and sufficiently reliable experience, such as industry experience that is properly modified to reflect the circumstances being modeled, if actual experience is not available, relevant, or sufficiently reliable;
 3. future expectations or estimates, including those derived from market **data**, when available and appropriate; and
 4. other relevant sources of **data** or information.
- b. **Range of Assumptions**—The actuary may consider using a range of **assumptions** and, if so, whether the number of **model runs** analyzed reflects a set of conditions consistent with the **intended purpose**.
- c. **Consistency**—Where appropriate, the actuary should use, or confirm use of, **assumptions** for the **model** that are reasonably consistent with one another for a given **model run**.

If the actuary is aware of material inconsistencies among **assumptions** used by the actuary in the **model**, the actuary should disclose the inconsistencies and known reasons for the inconsistencies. In the case of **assumptions** prescribed by applicable law, the actuary's disclosure may be limited to identifying the possibility of an inconsistency with other **assumptions**.

- d. **Appropriateness of Input in Current Model Run**—Where practical and appropriate, the actuary reusing an existing **model** should evaluate whether **input** unchanged from a prior **model run** is still appropriate for use in the current **model run**. For example, **models** used in financial reporting may offer opportunities to compare **assumptions** to emerging experience in the aggregate.
- e. **Reasonable Model in the Aggregate**—The actuary should assess the reasonability of the **model output** when determining whether the **assumptions** are reasonable in the aggregate. While **assumptions** might

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appear to be reasonable individually, conservatism or optimism in multiple **assumptions** may result in unreasonable **output**.

3.2 **Understanding the Model**—When expressing an opinion on or communicating results of the **model**, the actuary should understand the following:

- a. important aspects of the **model** being used, including but not limited to, basic operations, important dependencies, and major sensitivities;
- b. known weaknesses in **assumptions** used as **input**, known weaknesses in methods or other known limitations of the **model** that have material implications; and
- c. limitations of **data** or information, time constraints, or other practical considerations that could materially impact the **model's** ability to meet its **intended purpose**.

3.3 **Reliance on Data or Other Information Supplied by Others**—When relying on **data** or other information supplied by others, the actuary should refer to ASOP No. 23 and ASOP No. 41, *Actuarial Communications*, for guidance.

3.4 **Reliance on Models Developed by Others**—If the actuary relies on a **model** designed, developed, or modified by others, such as a vendor or colleague, and the actuary has a limited ability either to obtain information about the **model** or to understand the underlying workings of the **model**, the actuary should disclose the extent of such reliance. In addition, the actuary should make a reasonable attempt to have a basic understanding of the **model**, including the following, as appropriate:

- a. the designer's or developer's original **intended purpose** for the **model**;
- b. the general operation of the **model**;
- c. major sensitivities and dependencies within the **model**; and
- d. key strengths and limitations of the **model**.

When relying on **models** developed by others, the actuary should make practical efforts to comply with other applicable sections of this standard.

3.5 **Reliance on Experts**—The actuary may rely on experts in the fields of knowledge used in the development of the **model**. In determining the appropriate level of reliance, the actuary may consider the following:

- a. whether the individual or individuals upon whom the actuary is relying are experts in the applicable field;

- b. the extent to which the **model** has been reviewed or validated by experts in the applicable field, including known material differences of opinion among experts concerning aspects of the **model** that could be material to the actuary's use of the **model**;
- c. whether there are industry or regulatory standards that apply to the **model** or to the testing or validation of the **model**, and whether the **model** has been certified as having met such standards; and
- d. whether the science underlying the expertise is likely to produce useful **models** for the **intended purpose**.

When relying on experts, the actuary should disclose the extent of such reliance.

3.6 Evaluation and Mitigation of Model Risk—The actuary should evaluate **model risk** and, if appropriate, take reasonable steps to mitigate **model risk**. The type and degree of **model risk** mitigation that is reasonable and appropriate may depend on the following:

- a. the **model's intended purpose**;
- b. the nature and complexity of the **model**;
- c. the operating environment and **governance and controls** related to the **model**;
- d. whether there have been changes to the **model** or its operating environment; and
- e. the balance between the cost of the mitigation efforts and the reduction in potential **model risk**.

3.6.1 Model Testing—For a **model run** or set of **model runs** generated at one time or over time that is to be relied upon by the **intended user**, the actuary should perform sufficient testing to ensure that the **model** reasonably represents that which is intended to be modeled. **Model** testing may include the following:

- a. reconciling relevant **input** values to the relevant system, study, or other source of information, addressing and documenting the differences appearing in the reconciliation, if material;
- b. checking formulas, logic, and table references;
- c. running tests of variations on key **assumptions** used as **input** to test that changes in the **output** are consistent with expectations given the changes in the **input** (i.e., sensitivity testing); and

- d. reconciling the **output** of a **model run** to prior **model runs**, given changes in **data, assumptions**, formulas, or other aspects of the **model** since the prior **model run**.
- 3.6.2 **Model Output Validation**—The actuary should validate that the **model output** reasonably represents that which is being modeled. Depending on the **intended purpose**, **model output** validation may include the following:
- a. testing, where applicable, preliminary **model output** against historical actual results to verify that modeled **output** would bear a reasonable relationship to actual results over a given time period if **input** to the **model** were set to be consistent with the conditions prevailing during such period;
 - b. evaluating whether the **model** applied to **hold-out data** produces **model output** that is reasonably consistent with **model output** developed without the **hold-out data**, as may be used for predictive **models**;
 - c. performing statistical or analytical tests on **model output** to assess their reasonableness;
 - d. running tests of variations on key **assumptions** to test that changes in the **output** are consistent with the expectations given the changes in the **input**; and
 - e. comparing **model output** to those of an alternative **model(s)**, where appropriate.
- 3.6.3 **Review by Another Professional**—The actuary may consider obtaining a review by another qualified professional, depending upon the nature and complexity of the **model**.
- 3.6.4 **Reasonable Governance and Controls**—The actuary should use, or, if appropriate, may rely on others to use, reasonable **governance and controls** to mitigate **model risk**.
- 3.6.5 **Mitigating Misuse and Misinterpretation**—The actuary should refer to the guidance in ASOP No. 41, in particular sections 3.4.1 and 3.7, to mitigate possible misuse and misinterpretation of the **model**.
- 3.7 **Documentation**—The actuary should consider preparing and retaining documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. If preparing documentation, the actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary's work. The degree of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose

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of the actuarial services. In addition, the actuary should refer to ASOP No. 41, section 3.8, for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing an actuarial report under this standard, the actuary should refer to ASOP Nos. 23 and 41. In addition, the actuary should disclose the following in such actuarial reports:
 - a. the **intended purpose** of the **model**, as discussed in section 3.1;
 - b. material inconsistencies, if any, among **assumptions**, and known reasons for such inconsistencies, as discussed in section 3.1.6(c);
 - c. unreasonable **output** resulting from the aggregation of **assumptions**, if material, as discussed in section 3.1.6(e);
 - d. material limitations and known weaknesses, as discussed in section 3.2;
 - e. extent of reliance on **models** developed by others, if any, as discussed in section 3.4; and
 - f. extent of reliance on experts, if any, as discussed in section 3.5.
- 4.2 **Additional Disclosures in an Actuarial Report**—The actuary should include the following, as applicable, in an actuarial report:
 - a. the disclosure in ASOP No. 41, section 4.2, if any material **assumption** or method was prescribed by applicable law;
 - b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material **assumption** or method selected by a party other than the actuary; and
 - c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary’s professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.
- 4.3 **Confidential Information**—Nothing in this ASOP is intended to require the actuary to disclose confidential information.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

Actuaries frequently use models to analyze uncertain outcomes, with every discipline relying on a broad range of modeling applications, ranging from simple spreadsheets to complex capital models. Actuaries have used models for a variety of purposes including to help explain a system, to study the effects of different parts of a system, to predict the behavior of a system, to predict the behavior of people, to derive estimates, or to inform decisions. The importance of modeling in actuarial science has continued to increase, with results of models sometimes being reflected in financial statements.

A model is only an approximation of reality, however, and not reality itself. Therefore, even a model that is prudently developed and carefully used does not eliminate inherent uncertainty and variability, and actual results may differ, sometimes significantly, from outcomes suggested by the model.

Current Practices

Actuaries use many types of models, ranging from projection models to statistical models and predictive models. Some models evolve through a life cycle consisting of: (1) a specification phase, (2) an implementation phase, and (3) a production phase, which consists of one or more model runs. Other models evolve through a life cycle of: (1) a specification phase, (2) an iterative, assumptions estimation phase, and (3) an output evaluation, validation, and selection phase. For other models, combinations of functionally similar phases may exist.

Appropriate model governance and controls are important when using models. Examples of model governance and controls include the following:

- limitations on access to use and modify the model (that is, restricting access to model input, model programming code and calculations, and model output);
- confirmation that model output is reproducible upon rerun (if the model allows for such reproducibility);
- implementing a model change management process;
- specification, documentation, and programming standards for the model;

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- procedures for secure back-up of the media storing the programming code and data;
- appropriate staff training or cross-training for continuity of use and mitigation of key-person risk;
- plans for periodic consideration of the organization's continued ability to access and maintain the model, including data, software, staff, hardware, and any vendor relationships; and
- plans for periodic review of the assumptions, functionality, and methodology.

Appendix 2

Comments on the Fourth Exposure Draft and Responses

The fourth exposure draft titled *Modeling* was approved by the ASB in December 2018 with a comment deadline of May 15, 2019. Twenty-six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term “commentator” may refer to more than one person associated with a particular comment letter. The Task Force and General Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the General Committee.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each. Minor wording or punctuation changes that were suggested but not significant are not reflected in the appendix, although they may have been adopted.

The term “reviewers” includes the Task Force, General Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the fourth exposure draft, which are then cross referenced with those in the final ASOP.

GENERAL COMMENTS	
Comment	One commentator suggested that the uses of “any” when in the context of what an actuary should do or should consider, and other similar references, may be onerous to actuaries in practice, and recommended their elimination.
Response	The reviewers agree and made the change.
Comment	One commentator suggested retaining a definition of “simple model” conceptually similar to what was included in the third exposure, with the suggested enhancement of modifying “transparent and can be predicted” to “transparent or can be predicted” to improve its usefulness and clarity.
Response	The reviewers note the concept of “simple model” has been previously addressed and made no change.
Comment	One commentator suggested that the standard include a definition of and guidance for ongoing model performance monitoring.
Response	While the reviewers agree with the concept of ongoing performance monitoring within a formalized model risk management program, the reviewers disagree with the suggestion for this ASOP and therefore did not make the change.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.1, Purpose	
Comment	One commentator suggested that sections 1.1, Purpose, and 1.2, Scope, should include explicit reference to mitigating model risk since it is a key area of focus on the modeling process and there is an explicit section of the ASOP exposure draft dedicated to this practice.
Response	The reviewers believe the guidance is appropriate and therefore made no change.

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Section 1.2, Scope	
Comment	One commentator suggested that “responsible” should be replaced by “accountable” since it implies ownership – and the use of this term is more consistent with that used in the insurance industry to indicate appropriate ownership.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator recommended the use of the words “rely” and “reliance” be clarified as the terms are rather subtle given that some users of models consider the use of a model as reliance even when it is the user’s own model.
Response	The reviewers believe the guidance is appropriate and therefore made no change.
Comment	One commentator suggested that the standard be applied only to financial reporting models and perhaps enterprise risk models.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that the guidance for an actuary reviewing or evaluating models is not clear as to whether it is the model itself that is being reviewed or evaluated (which is what the text seems to literally suggest), or whether it is the use of the model that is being reviewed.
Response	The reviewers clarified the guidance.
Comment	One commentator disagreed with the exclusion of the concept of a “simple model” from the fourth exposure draft and recommended that the scope explicitly exclude simple calculations.
Response	The reviewers disagree with the suggestion and, therefore, did not make the change. The reviewers refer the commentator to section 1.2, Scope, including the definition of “model,” when considering the applicability of the guidance in the ASOP.
Comment	One commentator suggested certain references to “use” might be confusing, in particular: 1) When the actuary’s “use” of a model is not for the purpose of reviewing the model itself but only for the purpose of reviewing or using the output. In this instance, the standard should explicitly state that the actuary should not be charged with applying this standard, and 2) in the second paragraph that states the reviewing or evaluating actuary should “use the guidance in this standard to the extent practicable within the scope of the actuary’s assignment” and in third paragraph that appears to use “rely” and “use” interchangeably.
Response	The reviewers agree with the potential confusion that might arise with the word “use” in the second and third paragraphs, and replaced these two references to “use” in section 1.2, Scope to improve clarity. However, the reviewers believe the guidance in the second paragraph is appropriate and therefore made no change in response to that part of the comment.
Comment	Two commentators suggested that the first sentence in the fifth paragraph seems unnecessary and suggested eliminating that sentence. One commentator also suggested beginning the paragraph with the current third sentence.
Response	The reviewers agree and made the change.

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Comment	One commentator thought the example, “For example, actuarial services performed in relation to pension plan contribution and cost projection models...may require application of the guidance in this ASOP” was confusing.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 1.4, Effective Date	
Comment	Once commentator believes that the effective date language needs to be more descriptive because as written, it leaves many questions related to when the model was run, selected, developed, or when model results were communicated.
Response	The reviewers note that ASOPs apply to the actuary performing the actuarial services, and the effective date applies to “work performed [by the actuary] on or after....” Therefore, the reviewers made no change in response to this comment.
SECTION 2. DEFINITIONS	
Comment	One commentator suggested adding definitions for “testing,” “validation,” and “limitations.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.1, Assumption	
Comment	One commentator suggested that the definition of section 2.1, Assumption, be changed to note that an assumption can be produced as output from another model. Alternatively, the definitions of data and parameter in sections 2.2 and 2.12, respectively, could be changed to remove any reference to these items being produced from other models.
Response	The reviewers agree, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator question whether assumptions are always input into a model versus incorporated into the model operations or methodology.
Response	In an effort to improve clarity and in response to this comment, the reviewers revised the definition of “assumption” to “a type of explicit input...” thus differentiating between explicit and implicit assumptions.
Section 2.2, Data	
Comment	One commentator requested examples of data that can be input to a model in the same way that examples of parameters are provided in that section since data are often refreshed with each model run while parameters and assumptions often remain unchanged from one run to the next.
Response	While the reviewers did not make the specific recommended edit, the reviewers made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested that the drafted definition is too vague and general with respect to the kinds of data the ASOP addresses and suggested the definition be limited to quantitative or numerical data.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.3, Governance and Controls	
Comment	One commentator suggested that a more descriptive definition would be “The application of a set of procedures and an organizational structure designed so that intended users can have confidence that the model output is reliably calculated and utilized as intended.”
Response	The reviewers clarified the language.

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Comment	One commentator suggested defining “governance” and “controls” separately since they have different meaning.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.4, Input (now section 2.5)	
Comment	One commentator suggested the definition of input is very broad, and that input to a model can be in the form of 1) assumptions, 2) data, or 3) parameters. While each term is defined separately later in the document, the user must glean that they are not overlapping elements of input.
Response	The reviewers agree, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested adding the following sentence after the current sentence: “Input may include assumptions, data, and parameters.”
Response	The reviewers agree in part, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Section 2.5, Intended Purpose (now section 2.6)	
Comment	One commentator suggested clarifying whether a model can have more than one intended purpose, perhaps treating each intended purpose as a separate model, even where they have a common processing component. This approach will reinforce the need to assess the appropriateness of a combination of specific processing components, data, assumptions, parameters and output for each intended purpose.
Response	The reviewers believe the guidance is appropriate and therefore made no change.
Comment	One commentator understood the definition for all roles other than when the actuary is the model developer and suggested that there should be a consideration of other purposes to be efficient with modeling efforts and less siloed in approach.
Response	The reviewers disagree and therefore made no change.
Section 2.6, Intended User (now section 2.7)	
Comment	Three commentators suggested replacing “actuarial findings” with “model’s output” (which is defined in this ASOP while “findings” are not).
Response	The reviewers agree and made the change.
Comment	One commentator suggested replacing the word “actuarial findings” with “output of an actuarial model.”
Response	The reviewers agree in part and replaced “actuarial findings” with “model output.”
Comment	One commentator noted the definition is too broad as it describes an actuary as “able” to rely, and suggested alternatives of “likely” or “expected.”
Response	The reviewers disagree and therefore made no change.
Comment	One commentator suggested that, while the definition is identical to that contained within ASOP No. 41, <i>Actuarial Communications</i> , the use of “able” and “identifies” in the definition may cause confusion, and suggested the alternative “Any person whom the actuary has indicated is permitted to rely on the actuarial findings.”
Response	The reviewers disagree and therefore made no change.
Section 2.7, Model (now section 2.8)	
Comment	One commentator sought feedback regarding the definition of “model” in the context of several examples.
Response	The reviewers note that the ASOPs are principle-based and believe the current language covers these issues at the appropriate level of detail. Therefore, no change was made in response to this comment.

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Comment	One commentator suggested adding the caveat from the background section of appendix 1 to the definition of a “model” to emphasize that a model is not bad or inaccurate just because a model did not match actual experience, namely: “A model is only an approximation of reality, not the reality itself, and the differences between the model and actual experience, by themselves, do not indicate a flawed model or noncompliance with standards.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that the definition of a “model” is very broad and recommended defining the “processing component” to enable differentiation between simple calculations and a “model.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested removing the reference to “simplified” as it seems unnecessarily restrictive.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that the definition is too broad as it could be interpreted to include any actuarial service other than individual benefit calculations and recommended that the definition should also describe what is not a model, such as nondiscrimination testing.
Response	The reviewers believe the definition of “model” is appropriate but note that section 1.2 was modified to exclude <u>nondiscrimination testing</u> .
Comment	One commentator suggested that the definition be changed to include “contractual” as a type of input and suggested adding “actuarial” to the list. In addition, the commentator suggesting adding a new definition for “system” as referenced in the definition.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested separating the “results component” from the model definition because the use of “results” in section 2.10, Output, appears to be inconsistent with the “results component” as described in this definition and the definition of output allows that such output could be used as input to other models.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested changing “to predict the behavior of a system, or to derive estimates and guide decisions” to “to predict the behavior of a system, to derive estimates of a system, or to guide decisions,” because the former could imply “guiding decisions” and “deriving estimates” should always be considered together.
Response	The reviewers note that the last sentence in the definition was removed.
Comment	One commentator suggested that the definition and section 1.2, Scope, were unclear, and thus it was difficult to evaluate the remainder of the exposure draft.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Comment	One commentator suggested the definition was unclear as to what types of models were addressed by the ASOP, and recommended that the ASOP specifically refer to quantitative or numerical models with respect to data, parameters, input and output, and that the scope of the “models” covered by the ASOP should be limited to quantitative models (for example, estimates) or perhaps other types of models based directly on quantitative values and explicitly exclude algorithmic decision making and other forms of artificial intelligence.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.8, Model Risk (now section 2.9)	
Comment	One commentator suggested that the definition include specific guidance on the use of the term, namely that “model risk” is not intended to include the likelihood that actual results of most all models will often differ, perhaps materially, from that produced by the Model’s output, and recommended that, at a minimum, the sentence from the second paragraph (if not, the entire paragraph) in the “Background” section of this ASOP be made an integral part of the ASOP: “Even a model that is prudently developed and carefully used does not eliminate inherent uncertainty and variability, and actual experience may differ, sometimes significantly, from the estimates derived from the model results,” ideally, within this definition. As an alternative, the ASOP could add an additional definition for “model outcome risk.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggesting adding the consequence of model risk to the definition, namely that “Model risk can lead to financial loss, poor business and strategic decision making, or damage to ... reputation.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested rewording for better clarity as follows: “The risk of adverse consequences resulting from reliance on a model that does not adequately represent that which is being modeled or the risk of misuse or misinterpretation.”
Response	The reviewers agree and made the change in response to this comment.
Section 2.9, Model Run (now section 2.10)	
Comment	Two commentators sought clarification on what a model run constitutes, with one commentator recommending calling the collection of all simulations for a stochastic model as one model run to improve clarity.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggesting replacing “selection of input” with “set of input.”
Response	The reviewers agree and made the change.
Section 2.10, Output (now section 2.11)	
Comment	One commentator suggested that the four possible uses of output (i.e., point estimates, ranges, parameters for other models, or qualitative criteria for making decisions) fail to capture the use of a model for explaining a system or predicting its behavior.
Response	The reviewers agree and added “behavioral expectations” to the definition.

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Comment	One commentator noted that section 2.10, Output, only mentions parameters as output that might be used as input to other models, while different sections of the proposed ASOP also mention data and assumptions as possible model outputs that can be used as input to other models.
Response	The reviewers agree, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested eliminating “qualitative criteria on which decisions could be made,” which is vague and may include unintended application of the ASOP.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.11, Overfitting (now section 2.12)	
Comment	Three commentators suggested adding “materially” to the phrase “prediction accuracy decreased” to allow for the actuary to determine whether that decrease is large enough to cause concern.
Response	The reviewers agree and made the change.
Comment	One commentator suggested that including “may decrease” in place of “decrease” seems more appropriate since the guidance in section 3.14 uses the words “should consider.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested including a definition of underfitting as well as adding more descriptive examples for both overfitting and underfitting.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 2.12, Parameter (now section 2.13)	
Comment	One commentator suggested that to further distinguish parameter from data, it would be helpful to state, “Parameters often consist of product features that are used to configure a model for specific blocks of business. Unlike data, they typically remain constant from run to run, unless the model’s scope is expanded to include new products.”
Response	While the reviewers did not make the specific recommended edit, the reviewers made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator recommended further differentiating between a parameter used as an input to a model and that used as output from a model (for example, “input parameter” and “output parameter”).
Response	While the reviewers did not make the specific recommended edit, the reviewers made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested adding the phrase “that is not data or assumptions” after “contractual input” in the first sentence.
Response	The reviewers removed the reference to the term “contractual” within the definition of “parameter,” and revised the definitions of “assumptions,” “input,” and “output” to improve clarity.
Comment	One commentator shared an analysis of the definitions and use of the terms “parameter,” “assumptions,” “input” and “output,” and stated that it is not clear how “parameters” are distinguishable from other “assumptions” or “data.”
Response	The reviewers agree, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.

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Comment	One commentator observed that the definition of parameter appeared to be a subset of assumptions and recommended considering language to highlight that assumptions/methods may be used to develop the parameters used in the model.
Response	The reviewers agree in part, made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested adjusting the definition to restrict it to quantitative values.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES

Section 3.1, Model Meeting the Intended Purpose	
Comment	One commentator noted that actuaries will often “repurpose” models for different intended purposes and suggested that the ASOP explicitly require the actuary developing, selecting, or evaluating the model to identify and document the specific purposes or ranges of parameters/inputs, etc., for which the model is valid/applicable and require actuaries to identify what aspects of the model would need to be adjusted to eliminate model limitations. The commentator also suggested that actuaries developing models should anticipate modeling changes that will develop in the near future to avoid having rigid models.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.1.1, Designing, Developing, or Modifying the Model	
Comment	One commentator suggested that this section should speak directly to modeling choices. Where the design of a model includes significant modeling choices (for example, simplifications, approximations), the actuary should understand the rationale and/or justification for the choices made. Where an actuary is responsible for designing, developing, or modifying a model, the actuary should consider whether developmental testing is needed to assess the appropriateness of significant modeling choices.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted that the meaning of “dependencies recognized” is not clear and requires additional explanation.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted that it may not be clear what the actuary is looking for in terms of “consistency with the intended purpose” when discussing the volatility of the expected values and that it’s not clear what “dependencies” are, in particular whether the term is referencing the dependencies among models or consistency of the model with its data, assumptions & parameters (A&P), and methods. In addition, the commentator suggested that a definition of dependencies would be helpful.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing the phrase “include but are not limited to” with “for example” since such a replacement would reduce the chance of misinterpretation of the guidance in terms of what the actuary is obliged to do.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Section 3.1.2, Selecting, Using, Reviewing, or Evaluating the Model (now titled, Selecting, Reviewing, or Evaluating the Model). Note: Changes to old section 3.1.2 have been incorporated into new section 3.1.3, Using the Model, as referenced below.	
Comment	One commentator noted that the initial input as well as revisions to input need to be consistent with the intended purpose, and therefore recommended removing the words “any revisions to.”
Response	The reviewers agree and made the change, which appears in new section 3.1.3.
Comment	One commentator noted general agreement, with the exception of “governance and controls,” which in many situations will be set at a firm-wide level and are not available for an actuary’s review (for instance, when an actuary uses its firm’s actuarial valuation software). Further, although the commentator agrees that governance and controls may affect the actuary’s ability to rely on the model, the commentator does not believe these factors would affect the model’s inherent consistency with its intended purpose, and suggested the ASOP should contain a separate section describing what an actuary should consider with respect to governance and controls for models.
Response	The reviewers believe the guidance, which now appears in new section 3.1.3, is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted confusion with the use of “output are consistent with the intended purpose,” and that the use of “consistent” might result in confusion between sections 3.1.1 and 3.1.2. Further, the commentator suggested the word “validation” should be replaced with “testing” given that the term “validation” is a very particular word for many companies and usually corresponds to Independent Model Validation.
Response	The reviewers believe the guidance, which now appears in new section 3.1.3, is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing “confirm the model reasonably meets the intended purpose ...” with “review that the model is reasonable with respect to meeting the intended purpose ...” In addition, the commentator suggested replacing “to ensure that any revisions to the input and ... are consistent with the intended purpose.” with “to consider whether the revisions to the input and ... are consistent with the intended purpose.”
Response	The reviewers clarified the guidance.
Comment	One commentator suggested replacing the word “ensure” with “validate” and sought an example for what “the standard require(s) with respect to the determination of reasonability.”
Response	The reviewers clarified the guidance and replaced the word “ensure” with “use or confirm” in new section 3.1.3.
Section 3.1.3, Understanding the Model (now section 3.2)	
Comment	One commentator suggested replacing “results of the model,” with “output” as defined in section 2, requested clarification of “methods” in paragraph b, and suggested removing “time constraints” in paragraph c.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to these comments.
Comment	One commentator asked whether the actuary should also understand the appropriate use of the model.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator did not think this paragraph should be limited to when the actuary is expressing an opinion on or communicating results of the model and suggested “rewriting would be helpful here.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Comment	One commentator expressed uncertainty regarding the meaning of “dependencies,” and questioned whether “methods” meant the model “methodology” or whether it meant the methods used to develop the A&P.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing section 3.1.3 with the following: “When providing actuarial services which depend significantly on the use of one or more models, the actuary should understand the important aspects of each model being used, such as: a. basic operation of the model, significant dependencies and sensitivities among variables or parameters, input and output, in the model; b. significant known limitations with respect to assumptions and parameters used as input, with respect to the data, information or methods used to build, calibrate, test or validate the model, or with respect to other considerations known to pose material implications when using the model or interpreting model output; and c. significant limitations with respect to a material impact affecting the ability of the model to meet its intended purpose due to other practical considerations, such as data issues, incomplete information, time constraints, etc.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.1.4, Model Structure	
Comment	One commentator recommended removing the examples in 3.1.4(e), suggesting that they are not “useful or necessary.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that this section should clarify when the actuary should make this assessment, such as when designing, developing, modifying, selecting, using, reviewing, or evaluating a model, or only when doing some of those actions. In addition, the commentator requested further clarification on the meaning of “judgments reflected in the model” and recommended the removal of “the structure of” from the stem as it would not change the guidance and could prevent confusion/misinterpretation.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator questioned why only overfitting is considered, and suggested consideration of parsimony, identifiability, goodness of fit, theoretical consistency and predictive power given that overfitting is just one of many types of error that would result in deteriorating a model’s predictive power.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested including definitions for “projection model,” “statistical model,” and “predictive model.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing the current statement “whether the model is overfitting the data” with “whether the model is overfitting or underfitting the data” to fully capture the bias/variance tradeoff instead of focusing solely on overfitting.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Comment	One commentator suggested using “structure” instead of “form” for consistency with the title of 3.1.4, Model Structure.
Response	The reviewers disagree and therefore made no change.
Comment	One commentator suggested replacing should “consider” in section 3.1.4 with “evaluate and document,” and suggested adding wording that requires actuary to indicate how, if at all, modeling of these provisions, risks and interactions are simplified and therefore appropriate only in certain situations.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested adding the word “product” to the list in section 3.1.4(a), adding “or type” after “whether the form” to better reflect the reference to projection, statistical, predictive models, and whether “model requirements” may be necessary in section 3.1.4(c).
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested rewording of section 3.1.4, subsections a, d, e as follows: “(a) whether there are specific provisions and risks reflected in the model which are material and appropriate to the use of the model, for example, differences by business segment, contract or plan; (d) whether there is a significant and material risk of overfitting the model with the available data; (e) whether the model appropriately reflects the existence of significant options or features, which may apply, that could be reasonably expected to have a material effect on the output of the model. Examples include call options on fixed income assets, policyholder surrender options, and early retirement options.”
Response	The reviewers clarified the language regarding overfitting the model but made no change in response to the other comments.
Section 3.1.5, Data	
Comment	One commentator suggested that the actuary should consider what transformations of input data and assumptions, if any, are required and how these affect results.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.1.6, Assumptions and Parameters Used As Input (now section 3.1.6, Assumptions Used As Input)	
Comment	One commentator believes that it is “unnecessary, confusing and burdensome to include assumptions setting guidance in this standard, given the Assumptions ASOP currently under development, and given the many other ASOPs that provide assumption setting guidance for certain activities.”
Response	The reviewers believe the guidance is appropriate and therefore made no change related to this comment. This ASOP <u>may not reference another ASOP that continues to be within the exposure process.</u>
Comment	One commentator suggested adding “As” to the beginning of the stem of section 3.1.6, to read, “As for models that use assumptions and parameters as input....” In addition, the commentator noted that assumption setting and parameterization of assumptions should be mentioned separately for clarity as they are different activities and imply different risks.
Response	While the reviewers did not make the specific recommended edit, the reviewers made changes to the definitions of “assumption,” “parameter,” “input,” and “output,” and removed references to “parameter” within section 3 of the ASOP to improve clarity.
Comment	One commentator suggested the addition of an example of a model that does not use assumptions or parameters as input.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Section 3.1.6(a), Setting Assumptions and Parameters (now section 3.1.6[a], Setting Assumptions)	
Comment	One commentator stated that it should be a criterion that the actuary document assumptions appropriately or ensure that assumptions provided by others are documented as such.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested referring to ASOP No. 25, <i>Credibility Procedures</i> , when discussing using actual experience to the extent it is “relevant and sufficiently reliable” within section 3.1.6(a)(1).
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested adding a fifth line item to section 3.1.6(a), namely “prescribed assumptions set by law” and “prescribed assumptions set by another party” (as used in ASOP No. 27, <i>Selection of Economic Assumptions for Measuring Pension Obligations</i> , and ASOP No. 35, <i>Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations</i>) (for example, accounting assumptions), and assumptions developed with the opinion of experts. In addition, the commentator does not believe that the actuary should be required to assess whether assumptions that include prescribed assumptions set by law or prescribed assumptions set by another party are reasonable in the aggregate.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested changing the title of section 3.1.6(a) from “Setting Assumptions and Parameters” to “Setting Assumptions or Parameters” because the former could imply both are required, and adding reasonableness of individual assumptions or parameters that could have a material impact on model results to section 3.1.6(a) since reasonableness in aggregate is mentioned in 3.1.6(f).
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggesting rewording section 3.1.6(a)(1) to be “actual experience adjusted to current conditions where applicable, to the extent that adjustments to the data are considered to be available, relevant, and sufficiently reliable;” and requested a definition of “market data.”
Response	While the reviewers did not make the specific changes suggested, the reviewers replaced “It” with “actual experience” in section 3.1.6(a), Setting Assumptions, to improve clarity.
Section 3.1.6(b), Margins	
Comment	Several comments were received on the guidance or necessity of section 3.1.6(b), Margins.
Response	In response, the reviewers removed section 3.1.6(b), Margins.
Section 3.1.6(c), Range of Assumptions and Parameters (now Section 3.1.6[b], Range of Assumptions)	
Comment	One commentator suggested that it is not clear what is meant by a range of assumptions and parameters in section 3.1.6(c) and offered a number of alternative of the meaning of the phrase.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator questioned why the number of model runs was relevant to the range of assumptions and parameters.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Section 3.1.6(d), Consistency (now section 3.1.6[c], Consistency)	
Comment	One commentator suggested changing the phrase “...possibility of an inconsistency...” to “...potential of an inconsistency...”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that just requiring the actuary to “use or confirm use” is very weak guidance, and that the standard should use “not unreasonably inconsistent” in order to indicate that consistency in this context is subject to considerable judgment.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.1.6(e), Appropriateness of Input in Current Model Run (now section 3.1.6[d], Appropriateness of Input in Current Model Run)	
Comment	One commentator stated agreement with 3.1.6(e), and suggested the addition, perhaps in a separate paragraph, that the model itself (not just the input) should be evaluated.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested clarifying the following “... reusing an existing model...” given that the term “reusing” can also be interpreted as using an existing model for a different purpose while the intention here seems to be around using a model with updated data.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.1.6(f) Reasonable Model in the Aggregate (now section 3.1.6[e] Reasonable Model in the Aggregate)	
Comment	One commentator suggested that it would be helpful to provide an example of a situation where assumptions which are reasonable individually can produce output which is unreasonable in the aggregate, and recommended adding guidance around appropriate potential actions if the actuary determines this to be the case.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted that the determination on the reasonability of a model in the aggregate as well as the assumptions and parameters in the aggregate would typically involve examining the reasonability of the output of the model in making such a determination, and suggested articulating the importance of considering the reasonability of the output in making the determination of the reasonability of the model in the aggregate as well as the reasonability of the parameters and assumptions in the aggregate.
Response	The reviewers agree and added “the reasonability of the model output when determining” after “assess.”
Comment	One commentator suggested rewording section 3.1.6(f) as follows: “The actuary should assess whether the assumptions and parameters are reasonable in the aggregate. The actuary should consider those assumptions and parameters which might appear to be reasonable individually, but would produce unreasonable output, due to conservatism or optimism in multiple assumptions and parameters.”
Response	The reviewers agree and made changes similar to those suggested to improve clarity.
Section 3.2, Reliance on Data or Other Information Supplied by Others (now section 3.3, Reliance on Data or Other Information Supplied by Others)	
Comment	One commentator suggested adding the title of ASOP No. 23 consistent with the title of ASOP No. 41.
Response	The reviewers note that the ASOP follows an approved style guide. Since the title of ASOP No. 23, <i>Data Quality</i> , had been previously mentioned, no further reference is required for subsequent mentions.

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Section 3.3, Reliance on Models Developed by Others (now section 3.4, Reliance on Models Developed by Others)	
Comment	One commentator suggested that the actuary also consider the experience and qualifications of the colleague/vendor.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that to the extent the actuary relies on testing performed by others, the actuary should also make a reasonable attempt to understand testing that has been performed on the model, i.e., implementation testing as well as any developmental testing. In addition, the commentator suggested that actuary who relies on a model built by a vendor or other developer is still responsible for ensuring the model is appropriate given its intended purpose and that results of any ongoing performance monitoring processes should be added to the list items to examine and understand.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that this section would lead to a tremendous amount of additional, unnecessary work, and potential litigation risk if the work is not performed, such as when relying upon centralized valuation systems implemented and tested by others.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested removing the last sentence in the section as it is somewhat ambiguous and could leave open to interpretation which sections of the standard are applicable, and that the detailed sub-bullets 3.3(a)-(d) seem sufficient.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted that it isn't clear whether the intent is that the actuary should disclose reliance if they can do neither, or if they can do one but not the other, and that it is not clear whether "a limited ability ... to understand the underlying workings of the model" would include a situation where the actuary cannot review programming but can understand what the model is intended to produce and can verify reasonableness and recommended clarification.
Response	The reviewers agree with the suggestion that the actuary may have a limited ability to either "obtain information about the model or to understand the underlying workings of the model" or both. The reviewers added "either" to improve clarity. Otherwise, the reviewers believe the guidance is appropriate and made no further change.
Comment	One commentator recommended that a new sentence be added after the listing, "The actuary should continually evaluate model results in light of emerging experience to determine that the model is still appropriate for its intended purpose."
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator objected to permitting actuaries to rely upon models which they do not fully understand and feels this violates Precept 1 of the <i>Code of Professional Conduct</i> and diminishes our profession.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Section 3.4, Reliance on Experts (now section 3.5, Reliance on Experts)	
Comment	One commentator expressed no significant concerns with section 3.4, however noted that it will become cumbersome, confusing, and misleading in certain circumstances when the expert is employed by the same firm as the actuary. As a result, the commentator recommended that the requirement to disclose the extent of any reliance be limited to situations where the experts were not employed by the actuarial firm issuing the report.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested removing the last sentence, “The actuary should disclose the extent of any such reliance,” because section 4.1(f) already lists the disclosure requirement for 3.4.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.5, Mitigation of Model Risk (now section 3.6, Evaluation and Mitigation of Model Risk)	
Comment	One commentator recommended including a statement that model materiality is an important consideration in actions the actuary should take to mitigate model risk. The more material the impacts of a model can have on the company financial statements, capital positions, or management action, the more actions the actuary should take to mitigate the model risk.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator stated that the actuary should use judgment when assessing mitigation efforts as compared to model risk, and that the level of model risk mitigation should be commensurate with the perceived or actual level of risk associated with the use of the model.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator believes that “evaluate” implies a quantitative process and recommended replacing “evaluate” with a term such as “understand.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested changing the title of section 3.5 from “Mitigation of Model Risk” to “Evaluation and Mitigation of Model Risk” given the guidance.
Response	The reviewers agree and made the change.
Comment	One commentator suggested changing 3.5(d) to read “whether there have been any changes to the model or its operating environment” for consistency.
Response	The reviewers agree and made the change.
Comment	One commentator recommended the inclusion of guidance related to when and how often the actuary should evaluate model risk.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing 3.5(d) with the following: “(d) whether there have been significant changes to the model or to the underlying environment, conditions, experience, or process for which the model was designed; and”
Response	While the reviewers did not make the specific changes suggested, the reviewers replaced “modeling” with “operating” environment to improve clarity.

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Section 3.5.1, Model Testing (now section 3.6.1, Model Testing)	
Comment	One commentator suggested that section 3.5.1, Model Testing, should include reference to sensitivity testing given that it is an important part of model testing.
Response	The reviewers agree and added “running tests of variation on key assumptions used as input to test that changes in the output are consistent with expectations given the changes in the input (sensitivity testing).”
Comment	One commentator suggested that it should be clearer that “reconciling,” means that the values are input correctly in to the model or modeling software, and not just that the input data before it is loaded in to the model reconciles to the source data given that if someone reconciles that initial data before it is loaded in to a model reconciles with the admin system, but then loads it in to the model incorrectly, it is a source of model risk.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that section 3.5.1(b) deserves more attention as this is often the most time-consuming element of model testing and recommended stating that the actuary should consider what the major modeling methodology choices and simplifications are, as well as determine the best way to appropriately test formulas.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested adding in a new section 3.5.1(c): “Performing sample runs of individual model points to validate application of model logic and inputs” and shifting the existing 3.5.1(c) to 3.5.1(d).
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator sought clarification on how the actuary's responsibility for testing the model would differ between a “model run” and a “set of model runs generated at one time or over time.” In addition, the commentator suggested moving “data” to appear before “input,” and changing the definition of “model” to reference “formula” instead of “processing component” given that the term is more intuitive.
Response	The reviewers agreed with moving the reference to “data” to be before “assumptions” but did not make other changes in response to this comment.
Comment	One commentator suggested renaming these sections 3.5.1 and 3.5.2 to “model integrity testing” and “model output validation.”
Response	The reviewers agree that section 3.5.2, Model Validation, should be renamed to Model Output Validation, but did not change the title of section 3.5.1.
Comment	One commentator sought clarification on the determination of materiality in section 3.5.1(a), and on the difference between testing and validation.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator noted that sections 3.5.1 (a)-(c) could be considered model controls and governance, and not necessarily model testing.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Section 3.5.2, Model Validation (now section 3.6.2, Model Output Validation)	
Comment	One commentator sought clarification on the term “Model Validation,” and how the use of term in the ASOP differs from the use of that same term under SR 11-7: Guidance on Model Risk Management.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that section 3.5.2 should include and reference the concept of an “effective challenge,” and that the intensity and effort of the challenge should be commensurate with the risk and materiality of the model.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested adding an additional item under 3.5.2 related to predictive models, namely, “For predictive models, testing should include running the developed model against a hold-out dataset, not used to develop the model, to verify that modeled output would bear a reasonable relationship to actual results from the hold-out data.” In addition, the commentator suggested adding a definition of “hold-out data” such as: “Hold-out data – typically a random subset of the data being modeled. Hold-out data is not used to create the model itself, but rather, used to validate that the model that was built is truly predictive when applied to a previously unseen set of data.”
Response	The reviewers agree that changes were appropriate and modified the language in this section and added a definition of “hold-out data.”
Comment	One commentator suggested changing “The actuary should take appropriate steps to validate” to “The actuary should validate” for greater clarity.
Response	The reviewers agree and made the change.
Comment	One commentator suggested that section 3.5.2 be called Model Testing, given that Validation has a specific connotation to many companies that is not meant by what is being described.
Response	The reviewers modified the title of section 3.5.2 from Model Validation to Model Output Validation.
Section 3.5.3, Review by Another Professional (now section 3.6.3, Review by Another Professional)	
Comment	One commentator recommended striking section 3.5.3 since actuaries can always consider having another professional review their work and the section provides no guidance and is not needed.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator questioned when it would be appropriate to not obtain such a review and suggested that the word “may” be replaced by “should” or removing the sentence altogether.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing section 3.5.3 with the following: The actuary may consider obtaining a review by a second, qualified professional. Use of another review would increase depending upon the nature and complexity of the model as well as with the materiality of the intended use(s). ”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Section 3.5.5, Mitigating Misuse and Misinterpretation (now section 3.6.5, Mitigating Misuse and Misinterpretation)	
Comment	One commentator suggested that section 3.5.5 is already handled in the stem of 3.5 and recommended that this section be removed.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Comment	One commentator noted the reference in section 3.5.5 to sections 3.4.1 in ASOP No. 41 but noted there is no section 3.4.1 in ASOP No. 41.
Response	The reviewers note that section 3.4.1 in ASOP No. 41 is titled “Uncertainty or Risk.”
Comment	One commentator suggested mentioning the headings/titles of the section in other ASOPs in addition to the section numbers when they are being used as reference in case that the section numbers got changed in another ASOP for any reason.
Response	The reviewers note the standard follows an approved style guide and made no change in response to this comment.
Section 3.6, Documentation (now section 3.7, Documentation)	
Comment	One commentator suggested that the section should be more specific about what to document, with documentation best practices including the documentation of inputs, calculations – including key methodology choices (including simplifications and approximations), outputs, intended purpose, use limitations, and ongoing performance monitoring processes, model testing (including any developmental testing) and validation.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	Three commentators suggested strengthening the guidance by replacing “should consider” with “should.”
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested that the provision that the documentation could allow that another actuary qualified in the same practice area “assume the assignment if necessary” could be onerous in many cases and recommended that the ASOP should not expand upon general documentation requirements as the provision in the draft ASOP - that “another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work” - is sufficient.
Response	The reviewers agree and deleted “or could assume the assignment if necessary.”
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Required Disclosures in an Actuarial Report	
Comment	One commentator recommended changing the section name to “Disclosures in an Actuarial Report” since the use of “required” in the title is confusing given the guidance that the actuary “should disclose,” and recommended adding any unreasonable, unexplained variances from recent ongoing performance monitoring processes (addressed in a recommended new section 3.5.6) should be added to the list of items that should be disclosed.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator suggested replacing 4.1(d) with “d. unreasonable output resulting from the aggregation of assumptions and parameters used as input, if material, as discussed in section 3.1.6(f).”
Response	The reviewers agree with the concept and modified the language accordingly.
Comment	One commentator recommended changing “material limitations” to “material limitations, important aspects and weaknesses” to ensure disclosures cover all related items discussed in section 3.1.3.
Response	The reviewers agree in part and added “and known weaknesses” after “material limitations.”
Comment	One commentator suggested adding a clarification as to whether the “experts” in section 4.1(f) refer to outside experts or both outside and in-house experts.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.

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Comment	One commentator noted that not all items in section 3.3 are covered by the disclosures in section 4.1, namely key methods and A&P and model testing (sensitivities).
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator recommended that it be made clear that the ASOP does not require an actuarial report with respect to the models used by the actuary.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.
Comment	One commentator proposed removing section 4.2 as section 4.1 already requires compliance with the disclosure standards of ASOP No. 41.
Response	The reviewers believe the guidance is appropriate and therefore made no change in response to this comment.



**Actuarial Standard
of Practice
No. 57**

**Statements of Actuarial Opinion Not Based on an
Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance
Reserves and Related Actuarial Items**

**Developed by the
Actuarial Compliance Guideline No. 4 Task Force of the
Life Committee of the
Actuarial Standards Board**

**Adopted by the
Actuarial Standards Board
January 2023**

Doc. No. 208

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January 2023

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Statements of Actuarial Opinion Not Based on an Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Related Actuarial Items

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 57, Statements of Actuarial Opinion Not Based on an Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Related Actuarial Items

This document contains ASOP No. 57, *Statements of Actuarial Opinion Not Based on an Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Related Actuarial Items.*

History of the Standard

The ASB voted in April 1992 to expose a proposed actuarial standard of practice titled *Statutory Statements of Opinion by Appointed Actuaries for Life or Health Insurers*. The exposure draft covered both types of actuarial opinions required by the *Standard Valuation Law* and the 1991 version of the Actuarial Opinion Memorandum Regulation (Model Regulation): (1) the opinion under section 8 of the Model Regulation, which required an analysis of and an opinion about the adequacy of those assets that support the reserves to meet the company's obligations; and (2) the opinion under section 7, which did not require an asset adequacy analysis.

Letters of comment received, and discussions at an ASB public hearing on the draft in June 1992, focused largely on the issue of whether the proposed standard appeared to impose an asset adequacy analysis or cash flow testing on the smaller companies exempted from such analysis under section 7. Some commentators expressed the view that such analyses could be imposed on the appointed actuaries for the exempted companies because of ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*.

In 1993, the ASB adopted ASOP No. 22, *Statutory Statements of Opinion Based on Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, which replaced Financial Reporting Recommendation No. 7, *Statement of Actuarial Opinion for Life Insurance Company Statutory Annual Statements*, and No. 11, *Statement of Actuarial Opinion for Interest-Indexed Universal Life Insurance Contracts*, as guidance for opinions under section 8 of the Model Regulation.

Prior to the adoption, there had been discussions about whether ASOP No. 22 should cover opinions under both section 7 and section 8 of the Model Regulation. The ASB decided to limit ASOP No. 22 to cover opinions required under only section 8 and adopted Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy*

Analysis by Appointed Actuaries for Life or Health Insurers, in October 1993 to provide guidance on opinions required under section 7.

In the late 1990s and early 2000s, the ASB reviewed all standards of practice related to cash flow testing. Portions of ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, were incorporated into ASOP No. 7, *Analysis of Life, Health, or Property/Casualty Insurer Cash Flows*, and ASOP No. 22. In 2001, the ASB adopted the revised ASOP No. 7 and ASOP No. 22 and repealed ASOP No. 14.

In December 2012, the National Association of Insurance Commissioners (NAIC) initially adopted the *Valuation Manual*, which sets forth the minimum reserve and related requirements for jurisdictions where the *Standard Valuation Law*, as amended by the NAIC in 2009, has been enacted. The *Valuation Manual* took effect on January 1, 2017, pursuant to section 11 of the *Standard Valuation Law*. Requirements for the annual actuarial opinion and memorandum pursuant to section 3 of the *Standard Valuation Law* are provided in “VM-30, Actuarial Opinion and Memorandum Requirements.”

In response to these and other NAIC activities, the ASB decided to revise ASOP No. 22 in 2021. As ACG No. 4, the last remaining Actuarial Compliance Guideline, remained relevant for actuaries working for companies that receive an exemption from asset adequacy analysis, the ASB decided to convert ACG No. 4 into the standard format of an ASOP.

Exposure Draft

The exposure draft was issued in September 2022 with a comment deadline of January 15, 2023. No comment letters were received. Accordingly, no changes were made from the exposure draft to the final standard.

The ASB voted in January 2023 to adopt this standard.

Actuarial Compliance Guideline (ACG) No. 4 Task Force

Janice A. Duff, Chairperson	
Ashlee M. Borcan	Julian B. Levin
Alice M. Fontaine	Eddie A. Mire
Aaron J. Hodges	Cande J. Olsen

Life Committee of the ASB

Gabriel Schiminovich, Chairperson	
Lisa S. Kuklinski	Matthew A. Monson
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Robert M. Damler, Chairperson	
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Kevin M. Dyke	Christopher F. Noble
Laura A. Hanson	Judy K. Stromback
Richard A. Lassow	Patrick B. Woods

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.

PROPOSED ACTUARIAL STANDARD OF PRACTICE

**STATEMENTS OF ACTUARIAL OPINION NOT BASED ON AN
ASSET ADEQUACY ANALYSIS FOR LIFE INSURANCE, ANNUITY, OR HEALTH
INSURANCE RESERVES AND RELATED ACTUARIAL ITEMS**

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

- 1.1 **Purpose**—This actuarial standard of practice (ASOP or standard) provides guidance to actuaries when performing actuarial services with respect to providing a statement of actuarial opinion not based on an asset adequacy analysis for life insurance, annuity, or health insurance reserves and related actuarial items, pursuant to applicable law (statutes, regulations, and other legally binding authority).
- 1.2 **Scope**—This standard applies to actuaries when performing actuarial services with respect to providing a statement of actuarial opinion for life insurance, annuity, or health insurance reserves and related actuarial items that are within the scope of the Statement of Actuarial Opinion, NAIC Life and Accident & Health/Fraterna Annual Statement (Blue Book), when the statement is prepared to comply with applicable law and is not based on an asset adequacy analysis because of an exemption.

If the statement of actuarial opinion encompasses health insurance liabilities, ASOP No. 28, *Statements of Actuarial Opinion Regarding Health Insurance Assets and Liabilities*, may also apply. If the statement of actuarial opinion includes reinsurance, ASOP No. 11, *Treatment of Reinsurance or Similar Risk Transfer Programs Involving Life Insurance, Annuities, or Health Benefit Plans in Financial Reports*, may also apply.

This standard does not apply to actuaries when performing services with respect to providing statements of actuarial opinion based on asset adequacy analysis that are subject to ASOP No. 22, *Statements of Actuarial Opinion Based on Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Other Liabilities*.

If a conflict exists between this standard and applicable law, the actuary should comply with applicable law. If the actuary departs from the guidance set forth in this standard in order to comply with applicable law, or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

- 1.3 **Cross References**—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

- 1.4 **Effective Date**—This standard is effective for all statements of actuarial opinion covered by the scope of this ASOP issued on or after **June 15, 2023**.

Section 2. Definitions

The definition below is defined for use in this actuarial standard of practice and appears in bold throughout the ASOP.

- 2.1 **Subsequent Events**—Material events that occur after the valuation date and before the date the statement of actuarial opinion is signed.

Section 3. Analysis of Issues and Recommended Practices

- 3.1 **Intended Purpose and Intended Users of the Statement of Actuarial Opinion**—The actuary should identify the intended purpose and intended users of the statement of actuarial opinion. For example, the intended purpose may be to satisfy the requirements for such an opinion under the NAIC Life and Accident & Health/Fraternal Annual Statement (Blue Book), and the intended users may be the company and its regulators.

- 3.2 **Exemption from Asset Adequacy Analysis**—Eligibility for an exemption from submitting a statement of actuarial opinion based on an asset adequacy analysis is determined using criteria specified in applicable law. The actuary should confirm that the eligibility criteria have been met. Such confirmation may include a dialogue with the state regulator. The actuary should maintain appropriate documentation indicating eligibility for the exemption. In addition, the actuary should make reasonable efforts to determine that no requirement for an asset adequacy analysis has been triggered by a specific request from the domiciliary insurance department. A written statement from a responsible officer of the company confirming that no specific request has been received will be deemed to satisfy this requirement.

- 3.3 **Statement of Opinion**—The actuary should include in the opinion a statement that the reserves and related actuarial items meet the minimum standards of the state in which the opinion is filed. The actuary should include in the opinion whether the opinion is qualified, adverse, or inconclusive and provide the underlying reasons.

The actuary should list in the statement of actuarial opinion the reserves and related actuarial items on which the actuary expresses an opinion. The form, content, and recommended language of the statement of actuarial opinion may be specified by applicable law.

The actuary should be familiar and comply with the requirements for reserves and related actuarial items of the insurance laws of each state in which the opinion is filed. The actuary should maintain documentation concerning compliance with the requirements.

- 3.4 **Policy and Contract Provisions Affecting Reserves and Related Actuarial Items**—The actuary should confirm that the policy and contract provisions affecting the reserves and related actuarial items have been taken into account. For example, these policy and contract provisions may include any guarantees, conversion and other rights, and nonforfeiture and other benefits.
- 3.5 **Determination of Reserves and Related Actuarial Items**—When the determination of reserves and related actuarial items is prescribed by law, the actuary should confirm that the prescribed methods and assumptions are taken into account.
- When the determination of reserves and related actuarial items is not prescribed by law (such as the estimation of life and health unpaid claim liabilities), the actuary should confirm that appropriate methods and assumptions were used to establish reserves and related actuarial items. For example, such assumptions may include mortality or morbidity improvement, the level of any margins needed to reflect provision for uncertainty in an estimate, and appropriate discount rates.
- 3.6 **Reinsurance**—When taking into account the effect of reinsurance on the statement of actuarial opinion, the actuary should refer to ASOP No. 11. In the case where a company has ceded all of a particular block of business, the actuary should determine whether provisions for any residual or contingent obligations of the ceding company should be established.
- 3.7 **Use of Data Predating the Valuation Date**—When reserves and other actuarial items are based on data predating the valuation date, the actuary should take into account the reasonableness of the use of such prior period data and whether any material events have occurred prior to the valuation date that would invalidate that use.
- 3.8 **Subsequent Events**—The actuary should make a reasonable effort to be informed about **subsequent events**.
- 3.9 **Changes in Methods, Models, or Assumptions**—If the methods, models, or assumptions supporting the reserves and related actuarial items differ from those in the prior statement of actuarial opinion, the actuary should consider quantifying the impacts of these changes. The actuary should determine whether regulatory approval is required prior to changing methods or assumptions for any reserves and related actuarial items.
- The use of new methods, models, or assumptions for new segments of reserves and related actuarial items (for example, a new line of business or product) is not a change within the meaning of this section.
- 310 **Reliance on Data or Other Information Supplied by Others**—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.

- 3.11 **Opinions of Other Actuaries**—The opining actuary should form an overall opinion without claiming reliance on the opinions of other actuaries.
- 3.12 **Documentation**—In addition to the documentation requirements in section 3, the actuary should prepare and retain documentation to support compliance with the requirements of section 3 and the disclosure requirements of section 4. The actuary should prepare such documentation in a form such that another actuary qualified in the same practice area could assess the reasonableness of the actuary’s work. The amount, form, and detail of such documentation should be based on the professional judgment of the actuary and may vary with the complexity and purpose of the actuarial services. In addition, the actuary should refer to ASOP No. 41 for guidance related to the retention of file material other than that which is to be disclosed under section 4.

Section 4. Communications and Disclosures

- 4.1 **Required Disclosures in an Actuarial Report**—When issuing any actuarial report within the scope of this standard, including statements of actuarial opinion, the actuary should refer to ASOP Nos. 11, 23, 28, and 41, as applicable. In particular, consistent with the intended purpose and intended users of the actuarial report, the actuary should disclose the following, as applicable:
- a. the intended purpose and intended users (see section 3.1);
 - b. the basis for determining eligibility for an exemption from submitting a statement of actuarial opinion based on an asset adequacy analysis (see section 3.2);
 - c. a statement that the reserves and related actuarial items meet the minimum standards of the state in which the opinion is filed, or whether the opinion is qualified, adverse, or inconclusive (see section 3.3);
 - d. the methods and assumptions for determining reserves and related actuarial items (see section 3.5);
 - e. the impact of reinsurance on the statement of actuarial opinion (see section 3.6);
 - f. the use of any prior period data underlying the reserves and related actuarial items and whether any material events have occurred prior to the valuation date that would invalidate the use of that data (see section 3.7);
 - g. any **subsequent events** of which the actuary is aware (see section 3.8).
 - h. any material changes in the methods, models, or assumptions from those used in the prior statement of actuarial opinion or if the methods, models, or assumptions used in the prior statement of actuarial opinion are unknown (see section 3.9);

- i. the extent of reliance on data or other information supplied by others (see section 3.10); and
- 4.2 Additional Disclosures in an Actuarial Report—The actuary should also include disclosures in accordance with ASOP No. 41 in an actuarial report for the following circumstances:
- a. if any material assumption or method was prescribed by applicable law;
 - b. if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and
 - c. if in the actuary's professional judgment, the actuary has deviated materially from the guidance of this standard.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes and is not part of the standard of practice.

Background

In 1975, the National Association of Insurance Commissioners (NAIC) began requiring that a statement of actuarial opinion on reserves and related actuarial items be included in the annual statement filed by life and health insurance companies. In response to this requirement, the American Academy of Actuaries promulgated Financial Reporting Recommendation No. 7, *Statement of Actuarial Opinion for Life Insurance Company Statutory Annual Statements*, setting forth the actuary's professional responsibilities in providing such an opinion.

The form and content of this actuarial opinion, as specified in the instructions to the annual statement, dealt specifically with reserves and did not explicitly address the adequacy of the assets supporting these reserves and other liabilities to meet the obligations of the company. Although not explicitly required to do so by the opinion or by existing professional standards, some actuaries began to analyze the adequacy of assets in forming their opinions. In addition, when the state of New York adopted the 1980 amendments to the *Standard Valuation Law*, it established an optional valuation basis for annuities, permitting lower reserves provided that an asset adequacy analysis supported the actuarial opinion with respect to such reserves.

The type of asset adequacy analysis most widely used by actuaries is multi-scenario cash flow testing. To guide actuaries choosing to use this technique, the Actuarial Standards Board (ASB) adopted ASOP No. 7, then titled *Performing Cash Flow Testing for Insurers*, in October 1988. In addition, in July 1990, the ASB adopted ASOP No. 14, *When to Do Cash Flow Testing for Life and Health Insurance Companies*, to provide guidance in determining whether to do cash flow testing in forming a professional opinion or recommendation.

In December 1990, the NAIC amended the *Standard Valuation Law*, and, in June 1991, the NAIC adopted the *Actuarial Opinion and Memorandum Regulation (AOMR)*. These actions had the effect of moving the requirement for the statement of actuarial opinion from the annual statement instructions into the model law itself and provided detailed instructions for the form and content of the opinion and the newly required supporting memorandum. The most significant changes made by the NAIC in the 1991 *AOMR* were that companies were required to name an appointed actuary, and, for companies subject to section 8 of the *AOMR*, statements of actuarial opinion on reserve and other liability adequacy were required to be based on an asset adequacy analysis described in the supporting memorandum. The asset adequacy analysis required by the regulation had to conform to the standards of practice promulgated by the ASB.

For companies subject to section 7, an actuarial opinion stating that the reserves and related actuarial items had been calculated in accordance with the *Standard Valuation Law* and

supporting regulations was required by the 1991 AOMR. Section 7 of the 1991 AOMR did not require an opinion on reserve adequacy.

In 1993, the ASB adopted ASOP No. 22, *Statutory Statements of Opinion Based on Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, which replaced Financial Reporting Recommendation No. 7 and No. 11, *Statement of Actuarial Opinion for Interest-Indexed Universal Life Insurance Contracts*, as guidance for section 8 opinions.

The ASB also adopted Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, in late 1993 to provide guidance for section 7 opinions.

In the late 1990s and early 2000s, the ASB reviewed all standards of practice related to cash flow testing. Portions of ASOP No. 14 were incorporated into ASOP Nos. 7 and 22. In 2001, the ASB adopted the revised ASOP Nos. 7 and 22 and repealed ASOP No. 14.

Starting in 2001, the model *AOMR* adopted by the NAIC required all actuarial opinions to be based on asset adequacy analysis. Several states allowed for single-state exemptions in their adoption of the *AOMR*. As a result, ACG No. 4 remains relevant.

In December 2012, the NAIC initially adopted the *Valuation Manual*, which sets forth the minimum reserve and related requirements for jurisdictions where the *Standard Valuation Law*, as amended by the NAIC in 2009, has been enacted. The *Valuation Manual* took effect on January 1, 2017, pursuant to section 11 of the *Standard Valuation Law*. Requirements for the annual actuarial opinion and memorandum pursuant to section 3 of the *Standard Valuation Law* are provided in “VM-30: Actuarial Opinion and Memorandum Requirements.” VM-30 also recognizes the existence of single-state exemptions from asset adequacy analysis.

In response to these and other NAIC activities, the ASB decided to revise ASOP No. 22 in 2021. As ACG No. 4, the last remaining Actuarial Compliance Guideline, remained relevant for actuaries working for companies that receive an exemption from asset adequacy analysis, the ASB decided to convert ACG No. 4 into the standard format of an ASOP.

Current Practices

Statements of actuarial opinion on reserves and related items have been provided since 1975, and practice regarding the basic elements of the opinion is well established. However, exemptions from asset adequacy analysis are no longer the norm in issuing actuarial opinions. Most exemptions from asset adequacy analysis are for companies licensed in a single state.

Eligibility for an exemption from submitting a statement of actuarial opinion based on an asset adequacy analysis is determined using criteria specified in applicable state law or stipulated by the state regulator. Typically, the actuary ensures that the eligibility criteria have been met by having a dialogue with the state regulator. In addition, the actuary typically makes reasonable

efforts to determine that no requirement for an asset adequacy analysis has been triggered by a specific request from the domiciliary insurance department.

Appendix 2

Comments on the Exposure Draft and Responses

An exposure draft of the proposed new ASOP on *Statements of Actuarial Opinion Not Based on an Asset Adequacy Analysis for Life Insurance, Annuity, or Health Insurance Reserves and Related Actuarial Items*, was issued in September 2022 with a comment deadline of January 15, 2023. No comment letters were received.