



# **ACTUARIAL STANDARDS BOARD**

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## **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**

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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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**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.

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### 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.

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- 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);



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- 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

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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:

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- 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.

<b>GENERAL COMMENTS</b>	
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.
<b>SECTION 2. DEFINITIONS</b>	
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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<b>SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES</b>	
<b>Section 3.2, Demographic Assumption Selection Process</b>	
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.
<b>Section 3.2.2, Consider the Relevant Assumption Universe</b>	
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.
<b>Section 3.2.4, Select the Specific Assumptions</b>	
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.
<b>Section 3.2.5, Select a Reasonable Assumption</b>	
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.
<b>Section 3.4, Specific Considerations</b>	
Comment	One commentator felt section 3.4 was too narrowly prescriptive.
Response	The reviewers disagree and made no change in response to this comment.
<b>Section 3.4.3, Mortality</b>	
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.
<b>Section 3.4.4, Mortality Improvement</b>	
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.
<b>Section 3.4.5, Disability and Disability Recovery</b>	
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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<b>Section 3.4.7, Expenses Paid from Plan Assets</b>	
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.
<b>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</b>	
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.
<b>Section 3.5.6, Missing or Incomplete Data</b>	
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.
<b>Section 3.7, Reviewing Assumptions Previously Selected by the Actuary</b>	
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.
<b>Section 3.9, Phase-in of Changes in Assumptions</b>	
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.
<b>Section 3.10, Other Considerations</b>	
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.
<b>Section 3.10.1, Adverse Deviation or Plan Provisions That Are Difficult to Measure</b>	
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.
<b>Section 3.10.3, Cost of Using Refined Assumptions</b>	
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.
<b>Section 3.10.4, Combined Effect of Assumptions</b>	
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.
<b>Section 3.10.6, Other Sources of Demographic Data and Analyses</b>	
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.
<b>Section 3.11, Documentation</b>	
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.
<b>SECTION 4. COMMUNICATIONS AND DISCLOSURES</b>	
<b>Section 4.1.1, Assumptions Used</b>	
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.
<b>Section 4.1.2, Rationale for Assumptions</b>	
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.
<b>Section 4.2, Disclosure about Assumptions Not Selected by the Actuary</b>	
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.