

Title of Exposure Draft: Treatment of Catastrophe or Extreme Event Losses in Future Cost Estimates for Property/Casualty Risk Transfer and Risk Retention

Comment Deadline: July 1, 2026

Instructions: Please review the exposure draft, and give the ASB the benefit of your recommendations by completing this comment template. Please fill out the tables within the section below, adding rows as necessary. Sample for completing the template provided at the following link:

Each completed comment template received by the comment deadline will receive consideration by the drafting committee and the ASB. The ASB accepts comments by email. Please send to comments@actuary.org and include the phrase 'ASB COMMENTS' in the subject line. Please note: Any email not containing this exact phrase in the subject line will be deleted by our system's spam filter.

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Restating comments verbatim or with slight variations may slow down the ASB review process. If you wish to reinforce any comments provided in another commentator's submission, please clearly state how your comments agree or differ.

I. Identification:

Gordon Hay

II. ASB First Exposure Draft Question 2. Response entered below pertains to Second Exposure Draft.

Question No.	Commentator Response
2	The question: "Is the guidance regarding scenario analysis clear and sufficient? If not, please explain."
	Of 10 commentators, #1-2 and 4-5 were silent. #3 said "see comments below" #6 and #9 said Yes. #7 said only Clear. #8 and #10 said No. Specific recommendations touching on scenario analysis came from #3, #8 and #10, but not from the others.
	Draft 2 Appendix 2 summarizes, "Several commentators said the guidance regarding scenario analysis is clear." #3, #8 and #10 did not get recognized. Now, does the second draft provide clear and sufficient guidance regarding scenario analysis, taking their comments into account? After an effort, I think "No, guidance regarding scenario analysis deserves further attention."

III. Specific Recommendations:

Section # (e.g. 3.2.a)	Commentator Recommendation (Please provide recommended wording for any suggested changes)	Commentator Rationale (Support for the recommendation)
2.1	Catastrophe—A low-frequency event with high-severity or widespread potential effects. Catastrophes may cause unusually large aggregate losses and distort historical experience. Catastrophes include property and casualty events such as hurricanes, earthquakes, wildfires, cyber attacks, pandemics and mass torts. Depending on the context, an extraordinarily severe individual occurrence may be considered catastrophic. Catastrophes may be referred to as "extreme events."	Examples, if needed, should not omit mass torts. It should be explicit that a single extraordinarily severe individual occurrence could be considered a catastrophe for ASOP 39 purposes. Many examples: In Workers Comp, incidents injuring or killing multiple workers are subject to no per-occurrence limit. Transportation risks can produce headlines: airplane crashes, Norfolk & Southern's East Palestine derailment, or Container Ship Dali contact with Francis Scott Key Bridge. Building fires: 1980 MGM Grand fire

		or Rhode Island’s 2003 Station nightclub fire.
2.2	<p>Catastrophe Model—A model of low-frequency events with high-severity or widespread potential effects. Catastrophe models may be used to explain a system, study effects of different components, or derive estimates. Catastrophe models can be designed in various ways, such as using historical experience with adjustments, using a loss severity distribution to derive a tail estimate from historical data, deterministic scenario analysis with no probabilistic assumptions, or stochastic modeling with a probability associated with each possible scenario.</p>	<p>The reviewers intended to “explicitly include deterministic scenario analysis” by adding “For example, stochastic models and deterministic scenario analyses can be used for catastrophe modeling.” Five observations:</p> <ol style="list-style-type: none"> 1. Current ASOP 39 refers to “models” in Sec. 3.2.2.b-c, as alternatives to any procedure using historical insurance data, with or without adjustments using non-insurance data. 2. The proposed definition of “catastrophe model” (following ASOP 38) is agnostic regarding modeling methods and assumptions, causing entanglements in second draft guidance. Historical insurance data with adjustments can be such a “catastrophe model,” but draft Sections 3.5.1.2, 3.5.3, 3.5.4, 3.6 and 3.7 use the term as if all “catastrophe models” are alternatives to using adjusted historical data. To differentiate, I’ll use “type-A cat models” to designate those based solely on historical data, and “type-B cat models” to designate all other cat models. 3. I will assume the ASB wants “catastrophe model” defined in ASOP 39 congruently with current ASOP 38. See Section 3.6 Overview below, and recommendations associated with 2nd ED Sections 3.3, 3.5.1.2, 3.5.3, 3.5.4, 3.6 and 3.7. 4. While it is true that “stochastic modeling and deterministic scenario analysis can be used for catastrophe modeling,” these are not mutually exclusive alternatives, nor are they the only approaches worth mentioning. Catastrophe models vary widely, with model outputs (and their usefulness) profoundly supported or constrained by available inputs. Invention of commercially available catastrophe models to which I’ve been exposed required a practical balance of stochastic and deterministic elements to get desired outputs for intended users from available inputs, with design decisions made under economic constraints. A simple “stochastic model” can be conceived by assigning probabilities to a catalog of “deterministic scenario analyses.” Or, paraphrasing what 1st exposure draft commentator #8 pointed out, a “deterministic scenario analysis” may BE a (non-stochastic) catastrophe model.... 5. The exposure draft’s second and third sentences (or my third sentence) could easily be considered educational content that belongs in the appendix.
3.2	<p>Identification of Potential Catastrophes—The actuary should take reasonable steps to identify scenarios that may produce catastrophe losses.</p> <p>Thresholds for “catastrophe” and “extreme event” may differ depending on the context and may be dictated or imposed by an outside entity. The actuary should use terms and meanings that are appropriate for the actuary’s assignment.</p>	<p>I recommend replacing “perils and events” with “scenarios.”</p> <p>“Perils and events” follows current ASOP 39 terminology (“peril” is a property insurance term-of-art). For P&C generally, “scenarios that may produce catastrophic losses” would serve better.</p>

3.3	<p>Identification and Attribution of Historical Catastrophe Losses—The actuary should identify, where practicable, the catastrophe losses in historical data. When doing so, the actuary should take into account how accurately these losses can be identified and the extent to which they may have a material impact on the results of the analysis.</p> <p>When attributing losses to a catastrophe, the actuary should do the following:</p> <ol style="list-style-type: none"> use criteria tailored to and consistently applied to the coverage and type of event, risk classifications, and historical periods; and make appropriate adjustments when the criteria result in a material inconsistency in how catastrophe losses are identified in the historical data. <p>The actuary should consider whether it is necessary to use methods that adjust for either the presence or absence of catastrophes in the historical insurance data. When the actuary believes such methods are necessary, the actuary should consider separating catastrophes in the historical data from non-catastrophes, facilitating use of alternative methods and assumptions when estimating future costs for catastrophes.</p>	<p>I appended a paragraph, because early in Section 3, we should guide the actuary to consider whether it is necessary to use methods that adjust for presence or absence of catastrophes in the historical insurance data. I have chosen Sec. 3.3, but in any case I'd place it before Sec. 3.5.</p> <p>Further, removing catastrophes from the historical data will usually increase the reliability of actuaries' non-catastrophe future cost estimates. The actuary who thinks an adjustment for the presence or absence of catastrophes is necessary should consider separating historical catastrophes from non-catastrophe historical data, facilitating use of alternative methods and assumptions when estimating future costs for catastrophes.</p>
3.5 (overview)		<p>Because the definition of "catastrophe model" includes models of catastrophes based solely on historical data, it is confusing at this point to say "The actuary may use insurance data, non-insurance data, or catastrophe models as described in the sections below." Deleting this sentence would be an improvement.</p> <p>Further, simplify the outline by making Sec. 3.5 solely about use of historical data. To achieve this:</p> <ol style="list-style-type: none"> Call this "Catastrophe Future Cost Estimates Using Historical Data." Combine 2nd exposure draft Sec. 3.5.2 Non-Insurance Data with Sec. 3.5.1 Use of Historical Insurance Data, and call the combination "Catastrophe Future Cost Estimates Using Historical Data." Move 2nd exposure draft Sec. 3.5.3 and 3.5.4 guidance into Sec. 3.6 and call the combination "Catastrophe Future Cost Estimates Using Other Methods." <p>Implications for the ASOP 39 outline start with replacing the 2nd exposure draft Sec 3.5 stem with content from 2nd exposure draft Sec. 3.5.1 stem, retaining references to ASOP 13 and 23 and renumbering subsections within Sec. 3.5.</p>
3.5	<p>Catastrophe Future Cost Estimates Using Historical Data—When the actuary believes methods that adjust for either the presence or absence of catastrophes in the historical insurance data are necessary, the actuary may use historical insurance data or historical non-insurance data. The actuary should refer to ASOP No. 13, Trending Procedures, and ASOP No. 23, Data Quality.</p>	<p>Special treatment for catastrophes is not always necessary, so I recommend starting with "When the actuary believes methods that adjust for either the presence or absence of catastrophes in the historical insurance data are necessary...."</p>
3.5.1	<p>Applicability of Historical Insurance Data—The actuary should assess the extent to which the exposures that</p>	<p>Renumber section.</p>

	generated the historical data are applicable to the future period, taking into account changes in coverages and provisions, applicable law, building codes, geographic representation, concentration, and other relevant factors.	No other recommendation.
3.5.2	Evaluating Credibility of Historical Insurance Data—The actuary should evaluate the credibility of historical catastrophic loss and adjustment expense data. The actuary should refer to ASOP No. 25, Credibility Procedures.	<p>Renumber section.</p> <p>Regarding guidance to consider comparing historical insurance data to "... catastrophe model output."</p> <p>1. The drafters defined "catastrophe model" (following ASOP 38) such that a future cost estimate for catastrophes developed using inputs and calculations (in ASOP 56 terminology) is a "catastrophe model" even if it was constructed using historical insurance data without reference to other sources, or perhaps a "deterministic scenario analysis." Is this worth disentangling?</p> <p>2. The drafters' intention may have been for the actuary to consider using (validated) "stochastic catastrophe model output" to demonstrate the (low) credibility of historical insurance data. However, validated catastrophe models incorporating non-insurance data tend to exist when (because?) historical catastrophe data plainly aren't a credible basis for estimating future catastrophe costs.</p> <p>Proposal: It is reasonable to assume a qualified casualty actuary can evaluate the credibility of all kinds of historical insurance data, with or without comparison with "non-insurance data" or validated cat model output. I recommend being satisfied with saying, "The actuary should evaluate the credibility of historical catastrophic loss and adjustment expense data."</p>
3.5.3 (stem)	<p>Adjustment of Historical Insurance Data to Reflect Future Conditions —The actuary should consider adjusting the historical insurance data to reflect the environment expected to exist in the period for which the actuary is estimating the future costs.</p> <p>To make such adjustments, the actuary should consider using historical insurance and non-insurance time-series data, taking into account the following:</p>	<p>Renumber section.</p> <p>In current ASOP 39, Sec. 3.3.2 provides a first alternative for the actuary who "believes that the available historical insurance data do not sufficiently represent the exposure to catastrophe losses." That is to "use non-insurance data to adjust historical insurance data...."</p> <p>Are any of the non-insurance items listed in Sec. 3.5.2 not historical time-series?</p> <p>Why doesn't this section explicitly guide actuaries to consider adjusting historical insurance data to reflect future conditions using available insurance and non-insurance data? Is 2nd ED Section 3.5.2 guiding the actuary to consider doing anything else?</p>
3.5.4	Stability vs. Responsiveness of Outcomes Based on Historical Insurance Data—The actuary should use professional judgment to select historical insurance data that represent the actuary's assessment of the risk of catastrophe losses for the applicable future period. When doing so, the actuary should take into account the sensitivity of future cost estimates to the inclusion or exclusion of historical catastrophe losses and to the selection of experience periods.	<p>Renumber section.</p> <p>No other recommendation.</p>
3.5.5 first paragraph	Differing Trends in Loss Data—Historical insurance data used to estimate future catastrophe losses will often extend over much longer time periods than data used in other applications; therefore, the effect of small differences in annual trend rates will be magnified. The	<p>Renumber section.</p> <p>No other recommendation.</p>

	actuary should take into account the potential for catastrophe losses to trend at a rate materially different from other losses and reflect such differences in trend assumptions and methods as appropriate.	
3.5.5 second paragraph	When trending prior years to current levels, the actuary may consider relevant indices from non-insurance sources, such as the U.S.Bureau of Economic Analysis, U.S.Bureau of Labor Statistics, and the U.S. Census Bureau.	<p>Much of what's here is repeated using different words in 2nd ED Sec. 3.5.2. The two lists could be consolidated here, to avoid giving redundant examples.</p> <p>From 2nd Exposure Draft Sec. 3.5.2 Non-Insurance Data: "Various organizations publish non-insurance data relevant to catastrophes. For example, the federal government publishes census and other data related to inflation, changes in exposure, population shifts, and other data relevant to assessing changes in exposure to catastrophe losses. Other organizations collect data on economic losses from catastrophes and historical patterns of cyber data breaches."</p>
3.5.6	Differing Development in Loss Data—Traditional actuarial loss development techniques may not be appropriate for catastrophe losses. The actuary should take into account the potential for catastrophe losses to emerge differently from other losses and reflect such differences in development assumptions and methods as appropriate.	<p>Renumber section.</p> <p>No other recommendation.</p>
Proposed removal	2 nd Exp. Draft Section 3.5.2 Non-Insurance Data seems unnecessary.	<p>The "Use of Non-Insurance Data and Models" section in current ASOP 39 has lost its importance in the 2nd ED. I propose to consolidate what remains (in 2nd ED Sec. 3.5.2 Non-Insurance Data) with guidance for use of historical insurance data.</p> <p>Contributing thoughts are:</p> <ol style="list-style-type: none"> 1. The second exposure Sec. 3.5.2 gives examples of non-insurance (historical) data (as far as I can tell, all time series), and guides the actuary to "follow the guidance for historical insurance data in Section 3.5.1, as applicable." I recommend consolidating the examples in 3.5.2 with the second paragraph of Sec. 3.5.5 (2nd Exp Draft Sec. 3.5.1.5). 2. Sec. 3.5.3 (2nd Exp Draft Sec. 3.5.1.3) should explicitly guide actuaries to consider adjusting historical insurance data to reflect future conditions using available insurance and non-insurance data. This is like the first option in current ASOP 39 Sec. 3.3.2. 3. The drafters replaced the second and third options in current ASOP 39 Sec. 3.3.2 Use of Non-Insurance Data and Models, with guidance using different terminology in Sections 2nd ED Sec. 3.5.3, 3.6 and 3.7.
Sec. 3.6 Overview	Combine guidance in 2 nd exposure draft Sec. 3.5.3 with guidance regarding selection of cat models, making Section 3.5 (with renumbering) solely about using historical insurance and non-insurance data.	<p>Making Sec. 3.5 solely about "Catastrophe Future Cost Estimates Using Historical Data," and making Sec. 5.6 solely about using other methods, would help disentangle what the ASB means by "catastrophe model." Thought process follows:</p> <ol style="list-style-type: none"> 1. Sec 3.5 in the 2nd ED overlooks a gap between what the drafters have defined to be "catastrophe models" and what current ASOP 39 Sec. 3.3.2 calls "models." 2. Type-A cat models: 2nd ED Sec 3.5.1 and 3.5.2 are

		<p>about adjusting historical experience. But, if a procedure based solely on historical data produces “A model of low-frequency events with high-severity or widespread potential effects,” the result is by definition a “catastrophe model.” I’ll call these “type-A cat models,” and think of Section 3.5 as the place for guidance regarding their use.</p> <p>3. Type-B cat models: 2nd ED Sec. 3.5.3 says, if the adjusted historical experience doesn’t suffice, consider using a “catastrophe model,” possibly after adjustments for reasons identical to those justifying adjustments to historical insurance data. These “type-B cat models” correspond to what current ASOP 39 Sec. 3.3.2a-b calls models based on non-insurance data, and models based on a combination of historical insurance data and noninsurance data.</p> <p>4. 2nd ED Sec. 3.5.4 says you can consider blending results from type-A and type-B cat models.</p> <p>5. 2nd ED Sec. 3.6-3.7 are about selecting among “type-B cat models,” and the inability to assume type-B cat models are available, appropriate and practicable.</p> <p>Recommendation: Edit Sec. 3.6 to combine 2nd ED Sec. 3.5.3 (guidance to consider using a type-B cat model) with 2nd ED Sec. 3.6 guidance (on selecting among type-B cat models) and 2nd ED Sec. 3.5.4 guidance (regarding blending). Give it a generic heading, such as “3.6 Catastrophe Future Cost Estimates Using Other Methods.”</p>
<p>3.6 - (segment from 2nd Exposure Draft Sec. 3.5.3)</p>	<p>Catastrophe Future Cost Estimates - Selecting Appropriate Other Methods—If, after considering the items contained in section 3.5, the actuary believes that the available historical data, with any appropriate adjustments, do not sufficiently represent the exposure to catastrophe losses, the actuary should consider using output from catastrophe models that incorporate relevant information from sources other than historical insurance and historical non-insurance data. The actuary should also refer to ASOP No. 38, Catastrophe Modeling (for All Practice Areas) and ASOP No. 56 Modeling.</p> <p>When using catastrophe model output, the actuary should consider whether the catastrophe model output needs to be adjusted, taking into account the factors in 3.5.1.3(a)-(h), as applicable.</p>	<p>Call Sec. 3.6 “Catastrophe Future Cost Estimates - Selecting Appropriate Other Methods.”</p> <p>1. The actuary who’s not satisfied using adjusted historical data (type-A cat models) should consider using output from catastrophe models that incorporate relevant information from sources other than historical insurance and historical non-insurance data (type-B cat models). My intent is for “type-A cat models” and “type-B cat models” to be mutually exclusive, and for their union to equal definition 2.2.</p> <p>If ASOP 39 (following ASOP 38) defines “Catastrophe model” to include any procedure that yields a (catastrophe) estimate using input and processing components of any kind, including adjustments to historical experience (type-A cat model). I hope Sec. 3.5 provides appropriate guidance regarding type-A cat models.</p> <p>Then, “type B cat models,” are “catastrophe models that incorporate information from sources other than historical insurance and non-insurance data.” With potentially rich non-insurance inputs, such cat models include what ASOP 38 Sec. 3.2 calls “Catastrophe Models Developed by Experts,” what the first exposure draft called “mature” cat models and what the second exposure draft calls</p>

		<p>“stochastic” cat models. Also, any scenario analysis (deterministic or not) within the ASOP 56 definition of “model,” that also incorporates non-insurance data other than historical data. “Type-B” also includes cat models outside the scope of ASOP 38, such as models of operational risk or models of economic extreme events. Finally “Type-B” would include cat models designed, developed or modified by the actuary, using anything other than historical insurance and non-insurance data - hence the reference to ASOP No. 56. I hope guidance starting with Sec. 3.6 provides reasonable guidance for using type B cat models.</p> <p>Recommended language is similar to 2nd ED 3.5.3, with my definition of type-B cat models replacing the broader defined term “catastrophe model.”</p>
<p>3.6 - (segment from 2nd Exposure Draft Sec. 3.6)</p>	<p>When selecting a catastrophe model, the actuary should refer to ASOP No. 38 and ASOP No. 56, Modeling. The actuary should take into account the following, if applicable:</p> <ul style="list-style-type: none"> a. whether the model's output is relevant for all or a subset of the portfolio, coverages, perils, or events; b. the extent to which models and experience are relevant if a peril or type of event is rapidly changing (such as cyber risk, climate change, or terrorism); and c. the impact of emerging technology, data, and methods. The actuary may review and discuss the issues, scenarios, and results of blending various approaches with experienced professionals in other relevant areas to gain additional insight. <p>The actuary should consider reviewing the results of more than one model to develop the future cost estimates.</p>	<p>I recommend locating content from 2nd Exposure Draft Sec. 3.6 between content from Sec. 3.5.3 and content from Sec. 3.5.4.</p> <p>Observing that items a, b and c raise points about a given type-B cat model's appropriateness, I did not compare 2nd ED Sec. 3.6-3.7 guidance and disclosures vs. ASOP 38 guidance and disclosures, and I did not explore whether 2nd ED guidance here is reasonably complete for actuaries trying to select appropriate type-B cat models.</p> <p>I resisted temptations to insert assertions about appropriateness derived from 2nd ED Sec. 3.6-3.7:</p> <p>“To the extent that catastrophe forecasts are uncertain, stochastic approaches are likely to be more appropriate than deterministic approaches.”</p> <p>“To estimate future catastrophe costs supporting prospective risk transfer, stochasticity may be a core requirement.”</p> <p>“A model in early stages of development, a model the actuary has developed to meet the immediate need, or a model with validation gaps, may nevertheless be useful, especially if alternatives are unavailable or impracticable.”</p> <p>Despite these opportunities, I did not edit this 2nd ED Sec. 3.6 language.</p>
<p>3.6 (segment from 2nd Exp Draft Sec. 3.5.4)</p>	<p>The actuary may blend historical experience with output from one or more catastrophe models when, in the actuary's judgment, it is appropriate to do so. For example, the actuary may use historical experience that has been capped to reduce volatility from extreme losses to derive the basic portion of the future cost estimates and a catastrophe model to derive an excess expected loss load for losses above the level chosen for capping the experience.</p>	<p>Placing 2nd ED Sec. 3.5.4 language here (not within guidance regarding use of historical data) would actaries to “blend when appropriate” in more circumstances. I changed “catastrophe model output” to “output from one or more catastrophe models.”</p> <p>Thoughts about examples:</p> <p>“Capping” is an action enabled by what the task force called “identifying” in Sec. 3.3, or what I’ve called “separating” or “removing” in my Sec. 3.3 comment.</p> <p>If the “excess load” in the example were to be derived from historical data, it would be output from what I called a “type-A cat model.” The model process might involve a longer experience period than “basic limits,” or an excess-layer estimate based on historical experience and an</p>

		<p>assumed loss distribution.</p> <p>A contrasting example: credibility-weighting catastrophe estimates derived two different ways, such as experience rating vs. exposure rating.</p> <p>One might think of outputs available from commercial hurricane or quake-shake models (type-B models) to be exposure rates with fairly high credibility compared to experience rates based on a relatively small number of historical events in an insurer's historical data.</p>
3.7 Overview		<p>Drafters replaced the second and third options in current ASOP 39 Sec. 3.3.2 Use of Non-Insurance Data and Models, using different terminology in Sections 3.5.3, 3.6 and 3.7.</p> <p>Sec. 3.7 in the 2nd Exposure Draft guides the actuary who's not satisfied with using adjusted historical experience to consider using a stochastic catastrophe model when available, appropriate and practicable. When not all three, the actuary should consider using deterministic scenario analysis or another reasonable approach.</p> <p>I will disagree.</p> <p>Guidance to consider using a "stochastic" catastrophe model (second exposure) is not congruent with guidance in ASOP 38 Sec. 3.1-3.8 for actuaries in all practice areas, when "selecting, using, reviewing or evaluating" catastrophe models. I avoid using a single adjective here.</p> <p>I would locate "appropriateness" guidance and disclosures with Sec. 3.6 (e.g. guidance regarding situations in which stochastic catastrophe models (or other categories) may be appropriate, or not.</p> <p>My recommended Section 3.7 text focuses instead on conditions under which the actuary may expect appropriate catastrophe models developed by others to be unavailable or impracticable.</p>
3.7	<p>Selecting Appropriate Catastrophe Models— When considering use of output from one or more catastrophe models, the actuary should consider such models' that incorporate relevant information from sources other than historical insurance and historical non-insurance data, the actuary should consider such models' availability, appropriateness and practicability.</p> <p>Situations in which an appropriate model may not be available and practicable include the following:</p> <p>a. When it is impossible or impractical to obtain required model inputs, such as measurable and appropriately denominated exposures, the catalogue of possible relevant catastrophic scenarios, and such scenarios' estimated probabilities;</p> <p>b. When future catastrophic event scenarios combined with covered exposures will produce future losses and loss adjustment expenses, through processes that are a priori unknown, unquantifiable or non-fortuitous to one or more involved parties;</p>	<ol style="list-style-type: none"> 1. Availability, appropriateness and practicability are promising criteria for selecting (or developing) catastrophe models. 2. 2nd ED Sec. 3.7 guidance (without extraneous content) is "The actuary should consider using a stochastic catastrophe model when available, appropriate, and practicable. When a stochastic catastrophe model is not available, not appropriate, or not practicable, the actuary should consider using deterministic scenario analysis or another reasonable alternative." 3. The guidance presents "stochastic catastrophe model" and "deterministic scenario analysis" as ranked alternatives. I think we know how to use the former for both pricing and ERM, but can we use the latter for pricing, without a massive dose of judgment? 4. Deterministic scenario analysis may be an attractive approach in the absence of appropriate and practicable cat models, for actuarial work that the task force has

	<p>c. When demand is not sufficient to fund development and maintenance of a catastrophe model that is appropriate for the actuary's assignment.</p> <p>If appropriate catastrophe models are not available and practicable, the actuary may develop, or engage with other experts to develop an appropriate catastrophe model, consistent with the Principal's needs and the scope of the assignment.</p> <p>1. When services within the actuary's assignment involve reviewing financial reports for internal or external use; conducting analyses of capital requirements, capital adequacy, and stress testing; or return period loss estimates:</p> <p>If an appropriate stochastic catastrophe model is unavailable or impracticable, the actuary should consider using deterministic scenario analysis or another reasonable alternative.</p> <p>2. When services within the actuary's assignment involve developing future cost estimates for catastrophes to underly product prices for direct insurance and reinsurance, funding requirements for self-insured programs and captives, or average annual losses and risk loads:</p> <p>The actuary should consider practicable approaches relative to the principal's needs. If the context is prospective risk transfer with guaranteed pricing, agreed coverage and established other terms, the actuary should consider negotiation to reach agreement among the actuary, principal and other interested parties on reasonable and fair consideration for the catastrophic coverage to be provided. To the extent that potential risk transfer parties find it difficult to agree on coverage, pricing or other practicalities, the actuary should consider recommending alternatives, such as retrospective rating, risk retention, risk avoidance, risk reduction or loss prevention.</p>	<p>added to ASOP 39 scope. Sec. 3.7 could acknowledge that, but unless there's some means to overcome its probability-blindness, deterministic scenario analysis seems inappropriate for estimating future average losses and adjustment expenses. My recommendation is to bifurcate the guidance.</p> <p>5. Between the two guidance assertions in Sec. 3.7, the 2nd ED retains the 1st ED list of five "casualty challenges," edited to make the five situations less exclusively "casualty" in nature. The 2nd ED asserts that these are situations in which a stochastic catastrophe model may not be appropriate." However, items a, b, d and e exemplify increased or extreme uncertainty, which usually means stochastic modeling WOULD be appropriate, if practicable. In any case, deleting items a, b, d and e would not change Sec. 3.7 guidance. Neither would guidance be changed by deleting the sentence that starts with "These situations are common for casualty...."</p> <p>6. 2nd ED Sec. 3.7 also asserts that when a stochastic catastrophe model is "in early stages of development and therefore may not provide reliable estimates," the model "may not be appropriate." The opposite is equally true: a model with shortcomings may nevertheless be useful, especially if available and practicable alternatives boil down to "judgment" or reliance on adjusted historical data that the actuary considers insufficient. The caveat (2nd ED Sec. 3.7.c) could be deleted without affecting Sec. 3.7 guidance. See Sec. 3.6 Overview - guidance could be more robust regarding "appropriateness" as a model-selection criterion.</p> <p>7. Rather than listing "situations in which a stochastic model may be inappropriate," we could identify "situations in which an appropriate catastrophe model may be unavailable or impracticable." This could support guidance prompting the actuary to understand and take timely mitigating action.</p> <p>Recommended language based on the following thoughts:</p> <p>a. Historically, prominent cat models widely used in the US started with data gathered, organized and made publicly available by the USGS and NWS. Property insured exposure data (coverage limits or replacement cost) provided inputs that hurricane and quake models could use, and those aggregates were conveniently collected by brokers for property cat reinsurers, especially for fixed location residential and commercial property. For widely varying casualty and other coverages, reported exposure aggregates may be not cat-model-friendly -- perhaps just a series of years' historical premium volumes and policy counts, by risk classification, with larger submissions supported by inspection reports, loss runs and premium audits.</p> <p>b. Natural physical processes (even with climate change) are more susceptible to objective modeling than social/economic/legal processes, which are often hard to describe objectively, or even imagine. The 1st exposure draft "casualty challenges" were examples. Operational risks are outside ASOP 38 scope....</p>
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IV. General Recommendations (If Any):

Commentator Recommendation (Identify relevant sections when possible)	Commentator Rationale (Support for the recommendation)

V. Signature:

Commentator Signature	Date
Gordon Hay, FCAS, MAAA	June 1, 2026