



U.S. Global Change Research Program
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To whom it may concern:

The Climate Change Joint Task Force of the American Academy of Actuaries,¹ appreciates this opportunity to provide the following comments regarding the draft of the Fifth National Climate Assessment (NCA5). The draft NCA5 covers an extensive range of climate issues and is a significant document for those interested in learning more about climate as well as for policymakers interested in information that will help them focus on potential actions. The task force has limited its comments to portions of a few chapters—Chapter 2 *Climate Trends* (and Appendix 4 *Indicators*), Chapter 15 *Human Health*, and Chapter 31 *Adaptation*.

In summary, the task force comments point out the following:

Chapter 2 *Climate Trends* and Appendix 4 *Indicators*: The Actuaries Climate Index (ACI) and the Actuaries Climate Risk Index (ACRI) are additional sources of information that aggregate data on the trends noted within the chapter but are related to specific reference periods, thus providing additional perspectives on the impacts of the trends.

Chapter 15 *Human Health*: Additional areas of stress on the access and delivery of health care under climate change include long-term services and support (LTSS) and several other areas.

Chapter 31 *Adaptations*: Limitations exist on the comparability and thus usability of the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFDs) prepared by private-sector entities as a basis for objective measurement of progress in adaptation.

Trends and the Actuaries Climate Index (ACI)

Throughout Chapter 2 *Climate Trends* and Appendix 4 *Indicators*, NCA5 primarily focuses on the need for and use of appropriate metrics to monitor changes in the physical, ecological, and societal systems associated with climate change. Along with the institutions mentioned in A4-3, the American Academy of Actuaries—in conjunction with the major professional actuarial organizations in North America (the Casualty Actuarial Society, the Society of Actuaries, and the Canadian Institute of Actuaries)—has

¹ The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

developed the ACI,² which is an objective indicator of the frequency of extreme weather and sea level changes. The latest methodological version, ACI 1.1, has been active since April 2019 and is updated on a quarterly basis. Unlike some of the trends mentioned in NCA5, the ACI specifically measures deviations from a reference period to highlight the extremes rather than other measures such as longer-term averages or cumulative annual amounts. The ACI can be viewed in total, broken down into its constituent six parts, and/or viewed by the 12 different regions within the United States and Canada. Underlying parts of the index is data derived from the National Oceanic and Atmospheric Administration's (NOAA's) Global Historical Climatology Network dataset, as well as reanalysis data from NOAA's National Centers for Environmental Prediction.

Both Chapter 2 and Appendix 4 in the NCA5 report specifically call out the trends in extreme events and the observed billion-dollar weather and climate-related disasters in the U.S. While the ACI supports the findings of the NCA5 in Key Message 2.2, *The Risk of Extreme Events*, regarding the increase in such extreme events, caution should be taken when making conclusions on the changes in the frequency of these events. As mentioned in the *Major Uncertainties and Research Gaps* section in Key Message 2.2, it is important to take into account the differences in regional exposures and how they have changed over time. Regarding this and other mentioned gaps in the research, the Academy is pursuing an update to the ACI to incorporate reanalysis data, and is also actively working to update the Actuaries Climate Risk Index (ACRI) to account for exposure changes and economic loss data. While the NCA5 report presents the increase in extreme events alongside the billion-dollar disaster events, the ACRI is designed to more directly correlate the increase in extreme events with economic losses.

Human Health—Access and Delivery

In Chapter 15 *Human Health*, subsection *Healthcare Access and Delivery* (under Key Message 15.2) provides limited examples of the climate-related risks to health care access for patients with serious and chronic medical conditions (only lung cancer and chronic kidney disease are mentioned, and the causes of access risks mentioned are road failures, no electricity, and no clean water). Consider broadening the scope of this section to include the risk of disruptions in continuity of care for many chronic physical and mental health conditions due to provider closures, and disruptions caused by exacerbation of symptoms. Pharmacy closures, sometimes long term, engender issues in drug regimens causing health crises resulting in emergency room visits and hospital admissions. The greater risks experienced by under-resourced communities is mentioned elsewhere in Chapter 15, but it is important to highlight their vulnerability in this *Healthcare Access and Delivery* subsection.

Perhaps the most serious access issue not discussed here revolves around the impacts to delivery of LTSS, ranging from home health care to the closure of subacute facilities in the wake of climate change and disasters. While this issue impacts all disabled and elderly persons, it is most severe in the lower-income and underserved communities. Not only are there climate-impacted structural issues with the homes and facilities that care for these patients, but the severe shortage of LTSS workers (including skilled health

² [The Actuaries Climate Index®](#) (ACI) v 1.1, created and maintained by four North American actuarial associations, including the Academy, documents changes in extreme occurrences of six climate-related elements of weather and sea level. The index—a measure summing the observations across all of the elements—covers the U.S. and Canada, and breaks results down for 12 regions, seven in the U.S. While the index generally shows increasingly extreme climatic conditions since the end of the index reference period (1961–1990), it also reveals the variability in those increases—both by element and by region. In 2020, the Academy published a preliminary model, [the Actuaries Climate Risk Index](#) (ACRI) v 1.0 and results providing estimates for property losses during the period 1991–2016 that could be attributed specifically to changing climate, controlling for changes in exposure.

care workers but especially home care aides, cleaners, and basic care workers) is exacerbated when climate events and worsening climate situations impact the caregivers themselves. Human health for people who rely on LTSS deteriorates with this double impact.

Adaptations—Measurement of private-sector efforts

Chapter 31 cites that 88% of U.S. companies have assessed their climate-related financial risks in alignment with the Financial Stability Board’s TCFD framework (page 31-6 line 18), but that the available private-sector information related to adaptation efforts especially related to transition planning is limited (page 31-27 lines 29-32). Data related to private-sector investments in adaptation is often available through financial statement or sustainability report disclosures that may be based on TCFD principles.

The Academy has conducted research that highlights some of the limitations to comparability of TCFD-based narrative disclosures. While this research was limited to insurance companies, the resulting themes related to comparability may be considered for other private-sector entities as well. This may add to the description of the evidence base (page 31-34 to 35) that describes the challenges of finding publicly available information related to adaptation that is both robust and comparable among companies.

The Academy’s Climate-Related Financial Disclosure Work Group has also been examining climate disclosures as they apply specifically to insurers. In the first part of that research, presented to the National Association of Insurance Commissioners (NAIC) in December 2020 and January 2021, that work group examined the climate-related financial disclosures that about 70% of the insurance industry completed in response to the NAIC’s Climate Risk Disclosure Survey. That survey consisted of nine Yes/No questions, with eight narrative responses required to provide additional elaboration. In the second part of that research, presented in January 2022, the work group compared the NAIC Climate Risk Disclosures with the TCFD Disclosures for the same companies.

Six insights from this analysis³ of these disclosures might be quite useful to the NCA5 while considering the level of usefulness of the TCFD disclosures:

1. TCFD reports generally provide more information than do NAIC survey responses;
2. The increase in information provided by the TCFD reports is accompanied by an increase in the variability of responses, however;
3. Certain topics—governance, metrics and model results, and opportunities provided by climate change—are significantly better covered by the TCFD than in the NAIC survey responses;
4. Certain other topics—operational risk, underwriting risk, and engagement with policyholders and key stakeholders—are less completely covered than in the NAIC survey responses;
5. Only companies that are relatively large as measured by market capitalization have been voluntarily submitting a TCFD report; and
6. The TCFD responses, as is also true of the NAIC survey responses, are very difficult to benchmark. The absence of clear, objective questions and the inclusion of narrative responses make the creation of benchmarks difficult and, thus, makes it difficult to assess individual companies against those benchmarks.

³ [*Research Report on Financial Stability Board’s Task Force on Climate-related Financial Disclosures \(TCFD\) and National Association of Insurance Commissioners \(NAIC\) Climate Risk Disclosure Survey Responses Compared Qualitatively and Quantitatively: Eight Companies in 2019—Twenty-four Companies in 2020*](#); American Academy of Actuaries; January 10, 2022.

These findings raise the following issue:

The Carbon Disclosure Project survey and the ClimateWise survey are both used by many companies voluntarily, and both are designed to satisfy the requirements of the TCFD reporting guidance. As a result, the U.S. Global Change Research Program might consider studying these two surveys (and others that meet the same criteria of widely used, systematic, and meeting TCFD requirements) more closely to determine how best to draw from them to improve the information related to adaptation planning and accomplishment.

As a result, both regulators and other stakeholders are likely to learn less from the responses—even when companies spend considerable resources producing robust responses—than they would if the TCFD framework were revised and implemented in a way that produced quantifiable metrics based on the responses. Whether the questions are closed-ended or are scored independently once submitted, quantifiable responses will provide regulators and stakeholders the opportunity to benchmark, assess, and compare.

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Again, the American Academy of Actuaries Climate Change Joint Task Force, appreciates this opportunity to provide comments to the Fifth National Climate Assessment. Hopefully these observations are helpful, and the task force welcomes the opportunity to discuss them. If you have any questions about our comments, please contact Craig Hanna, director of public policy, at (202) 223-8196.

Sincerely,

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