

## Draft Pending Adoption

Attachment One  
Climate and Resiliency (EX) Task Force  
12/14/21

Draft: 8/30/21

Climate and Resiliency (EX) Task Force  
Columbus, Ohio  
August 15, 2021

The Climate and Resiliency (EX) Task Force met in Columbus, OH, August 15, 2021. The following Task Force members participated: Ricardo Lara, Co-Chair, represented by Mike Peterson (CA); Raymond G. Farmer, Co-Chair, Michael Wise and Michelle Proctor (SC); Colin M. Hayashida, Co-Vice Chair (HI); James J. Donelon, Co-Vice Chair, and Warren Byrd (LA); Kathleen A. Birrane, Co-Vice Chair, and Kory Boone (MD); Mark Afable, Co-Vice Chair, (WI); Andrew R. Stolfi, Co-Vice Chair (OR); Lori K. Wing-Heier represented by Sarah Bailey (AK); Jim L. Ridling and Jimmy Gunn (AL); Michael Conway and Peg Brown (CO); Andrew N. Mais and George Bradner (CT); Karima M. Woods (DC); Trinidad Navarro (DE); David Altmaier and Susanne Murphy (FL); Gary D. Anderson (MA); Eric A. Cioppa and Robert Wake (ME); Anita G. Fox represented by Chad Arnold (MI); Grace Arnold (MN); Jon Godfread, John Arnold, and Chris Aufenthie (ND); Eric Dunning represented by Justin Schrader (NE); Russel Toal represented by Jennifer Catechis (NM); Barbara D. Richardson (NV); Linda A. Lacewell represented by My Chi To (NY); Judith L. French (OH); Jessica K. Altman (PA); Elizabeth Kelleher Dwyer, Matthew Gendron, and Jack Broccoli (RI); Scott A. White, Rebecca Nichols and Don Beatty (VA); Michael S. Pieciak represented by Rosemary Raszka (VT); Mike Kreidler and Jay Bruns (WA); James A. Dodrill (WV); and Jeff Rude (WY). Also participating were: Kathy Schmidt and Barb Rankin (KS); Doug Ommen and Travis Grassel (IA); Mike Chaney (MS); Lisa Cota-Robles and David Bettencourt (NH); Glen Mulready (OK); Mark Worman and J'ne Byckovski (TX) and Tracy Klausmeier (UT).

### 1. Adopted its 2021 Spring National Meeting Minutes

Commissioner Altmaier made a motion, seconded by Commissioner Dodrill, to adopt the Task Force's April 9, 2021, minutes (see *NAIC Proceedings – Spring 2021, Climate and Resiliency (EX) Task Force*). The motion passed unanimously.

### 2. Received Reports from its Workstreams

#### a. Pre-Disaster Mitigation Workstream

Commissioner Afable said the Pre-Disaster Mitigation Workstream met May 12 to discuss its goals and deliverables. He said the first goal was to compile a list of mitigation actions. The list has been compiled using reputable sources, such as the Insurance Institute for Building & Home Safety (IBHS), the Federal Emergency Management Agency (FEMA), the National Institute of Building Sciences (NIBS), and state departments. The list of mitigation actions has been exposed for a public comment period, and the Workstream is gathering comments on the mitigation actions as well as input on risk-based factors for insurance coverage. The initial focus is on wind mitigation, and the list of actions will help with production of consumer education and outreach, working with community stakeholders.

Commissioner Afable said the NAIC's Center for Insurance Policy and Research (CIPR) hosted a meeting for state departments in late July to facilitate discussion with Hagerty Consulting to explore the use of federal funding options for state resiliency projects. He said the Biden administration has increased funding levels for resiliency projects, raising the Building Resilient Infrastructure and Communities (BRIC) fund from \$500 million to \$1 billion for fiscal year 2021. President Joe Biden also announced that \$3.46 billion in mitigation funding would be made available through the Hazard Mitigation Grant Program (HMGP). HMGP is available in 59 states, territories, and tribes following disaster declarations due to the COVID-19 pandemic. Additionally, the U.S. Senate recently approved a \$1.2 trillion infrastructure package, which includes substantial funding for pre-disaster mitigation and flood mitigation assistance.

#### b. Solvency Workstream

Commissioner Birrane said the Solvency Workstream is focused on the regulatory oversight of climate-related financial risks faced by U.S. insurers. Specifically, the Workstream will identify and recommend enhancements to existing financial surveillance and reporting tools, such as the Own Risk and Solvency Assessment (ORSA) and the *Financial Condition Examiners Handbook* (Handbook), to ensure that climate-related risks are appropriately addressed. She said the Workstream expects to deliver its recommendations to the Climate and Resiliency (EX) Task Force in the fourth quarter of this year. The recommendations will include proposed referrals to the substantive committees that oversee the content of the applicable tools.

The Workstream held public meetings in May, June, and August. Each meeting consisted of presentations regarding critical foundational knowledge and context to guide its recommendations to the Task Force.

During its May 5 meeting, the Workstream provided a baseline of the state of climate-related financial surveillance by state insurance regulators and insurer responses. Deloitte provided a presentation on the evolution of regulator reaction to climate-related financial risks that insurers face. DLA Piper Global Law Firm provided an in-depth analysis of the history and current state of regulatory directives internationally. The Workstream also heard a presentation from FTI Consulting regarding insurer development of strategic and institutional responses to climate-related financial risks, as well as existing and anticipated governmental actions related to those risks. Furthermore, the Workstream held discussions with international organizations affecting the insurance sector, including the United Nations Environmental Programme's (UNEP's) finance initiatives, the UN Principles of Responsible Investment (PRI), and the Sustainable Insurance Forum (SIF).

During its June 1 meeting, the Workstream identified and defined the kinds of financial risk experienced by insurers and identified frameworks for evaluating and managing the risk. The Insurance Information Institute (III) described current industry practices for identifying risks, particularly related to physical risks in underwriting. AM Best and Moody's described how they account for climate-related risks in their assessment of credit worthiness and the impact on corporate credit. They described frameworks developed to determine the economic impact of climate risks on insurers.

During its Aug. 6 meeting, the Workstream explored risks on both sides of the balance sheet, asset, and liability risks. It considered transition risk to investments, as well as underwriting and liability. The Workstream heard presentations from the UN-Convened Net Zero Asset Owner Alliance, Transamerica, Allstate, and the UNEP Principles for Sustainable Insurance (PSI). Each presenter had an opportunity to describe their recommendation for revisions to U.S. financial solvency tools concerning climate-related risks. The Asset Owner Alliance shared its member-driven approach to shifting investments to both mitigate transition risk and prove good corporate citizenship and environmental stewardship. Transamerica shared tools for measuring and quantifying climate-exposure risk for investment portfolios and addressed the systemic nature of climate-risks. Transamerica shared viewpoints on financial surveillance tools, such as the ORSA's adaptability to address climate-related risk. PSI described its assessment frameworks for addressing physical, transition, and liability risks to insurers and its approach to portfolio assessment of such risks. Allstate described its coordinated top-down approach to integrating climate-related risk into its overall risk management strategy and demonstrated tracking of weather-related losses and the impact to underwriting.

Commissioner Birrane said the Workstream plans to meet on Sept. 20 to summarize the key takeaways from its earlier meetings, hear a presentation from the New York Department of Financial Services regarding its recently released guidelines and expectations for insurers related to climate risk, and hear a federal update. The Workstream will also invite comments regarding the need for enhancements to U.S. regulatory financial surveillance tools to better address climate-related risks and then shift its focus from information gathering to drafting its recommendations.

c. Climate Risk Disclosure Workstream

Commissioner Stolfi said the Climate Risk Disclosure Workstream met June 9 to hear a presentation from Morgan Stanley Capital International (MSCI) regarding environmental, social, and corporate governance (ESG) investment policies and climate solutions. The Workstream also reviewed comments received on its guiding questions to determine objectives of the NAIC Climate Risk Disclosure Survey. The Workstream then met in regulator-to-regulator session, pursuant to paragraph 8 (consideration of strategic planning issues) of the NAIC Policy on Open Meetings, to discuss comments received and prioritize the recommendations to be made by the Workstream. The Workstream determined that the purpose of the tool is to be a regulator resource to assess the risk management processes of insurers. It also determined that the results should continue to be publicly available, and the questions will be redesigned to align with the framework developed by the Financial Stability Board's (FSB) Task Force on Climate-Related Financial Disclosures (TCFD). Commissioner Stolfi said a drafting group was formed including California, New York, Oregon, and Washington. A draft of the new survey will be exposed for a public comment period before a recommendation is made to the Climate and Resiliency (EX) Task Force.

Commissioner Stolfi said Gary Gensler (U.S. Securities and Exchange Commission—SEC) remarked in an online seminar that while it is good to learn from external standard-setters like the TCFD, he believes in moving forward with writing rules and establishing the appropriate climate-risk disclosure regime for U.S. markets. Commissioner Stolfi said Mr. Gensler also indicated that he asked the SEC to develop a mandatory climate risk disclosure proposal for the SEC's consideration by the end of the year and consider metrics for specific industries, such as banking and insurance.

Commissioner Stolfi said the FSB is considering new metrics to capture quantitative information on climate risks. The FSB's TCFD is on a timeline to submit recommended updates to the FSB by Sept. 15 and publish guidance and implementation guidelines with the new metrics in October 2021. He said 15 states are participating in the NAIC Climate Risk Disclosure Survey in 2021. Six states have been participating for several years: California, Connecticut, Minnesota, New Mexico, New York, and Washington. Nine states were added in 2021: Delaware, District of Columbia, Maine, Massachusetts, Maryland, Oregon, Pennsylvania, Rhode Island, and Vermont.

d. Innovation Workstream

Commissioner Hayashida said the Innovation Workstream met May 10 to hear a presentation from the First Insurance Company of Hawaii regarding its parametric product FirstTrack. FirstTrack offers coverage for pre- and post-hurricane expenses like emergency supplies, groceries, debris removal, and minor repairs. The Workstream also met June 3 to hear a presentation from Jerry Skees (Global Parametrics). Mr. Skees described parametric products created for developing countries, including a risk pooling arrangement for 16 governmental organizations through the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC) and the African Risk Capacity (ARC), a specialized agency of the African Union established to help African governments improve their capacity to plan, prepare and respond to extreme weather events. The Workstream also met July 21 to hear presentations from the Bermuda Monetary Authority (BMA), Nephila Capital, and Renaissance Re. The BMA described its supervisory approach, working with capital solution providers to tailor products for alternative capital climate risk solutions. Nephila Capital described products for agriculture, utilities, governments, and school districts. Renaissance Re described how basis risk (the risk of losses incurred being higher or lower than the actual payout) is reduced when parametric products are used for communities or businesses instead of individual insureds. It also shared the history of the market for parametric products in alternative capital markets. The MetroCat Catastrophe Bond for the New York City subway is triggered by coastal surge. The Penn Union Catastrophe Bond for Amtrak is triggered by tidal and wind measurements using U.S. Geological Survey (USGS) data. The Workstream will continue hearing from parametric solutions for climate-related risk and summarize the design features integrated to close coverage gaps from extreme weather events.

e. Technology Workstream

Commissioner Donelon said the Technology Workstream met May 7 to discuss the need for a referral to the Catastrophe Insurance (C) Working Group to consider revisions to the *Catastrophe Computer Modeling Handbook* (Catastrophe Handbook). The Catastrophe Handbook was developed in 2010 to explore the use of catastrophe models and discuss issues arising from their use. The Workstream discussed the need for updates to include more perils and future looking climate models. The referral was delivered to the Catastrophe Insurance (C) Working Group and discussed during its public meeting on July 22. The Technology Workstream also met June 7 and Aug. 6 in regulator-to-regulator session, pursuant paragraph 6 (technical guidance from NAIC staff) of the NAIC Policy Statement on Open Meetings, to hear about the Center for Insurance Policy and Research (CIPR) study of wildfire risk in California, Colorado, and Washington in conjunction with the Risk Management Agency (RMA), as well as to discuss the wildfire model review taking place under the Catastrophe Risk (E) Subgroup.

3. Heard a Presentation on the California Department of Insurance Climate Working Group Recommendations Report

Mr. Peterson said Senate Bill 30, passed by the legislature and signed by the California Governor in September 2018, required the California Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate-related risks. The California Climate Insurance Working Group is comprised of 18 members, including the Natural Resource Defense Council (NRDC), The Greenlining Institute, the Environmental Defense Fund (EDF), The Nature Conservancy, the Audobon Society, Los Angeles County, Swiss Re, and Munich Re. The Working Group developed a report, *Protecting Communities, Preserving Nature and Building Resiliency*, which shows that the best long-term strategy is to drastically reduce greenhouse gas emissions. Mr. Peterson said the report includes impacts from extreme heat, wildfire, and flood—the most pressing perils affecting California right now. The report stresses community resilience, especially for the most vulnerable communities. Mr. Peterson said without greater investment in risk reduction and improved tools for financial resilience, communities are likely to enter a damaging feedback loop where escalating risks lead to increased losses, financial consequences, fewer insurance options, and a diminishing capacity for future resilience. The report recommends improved hazard mapping and disclosures, land and building codes, closing the protection gap, nature-based solutions, and innovation with mitigation.

Alice Hill (Council on Foreign Relations—CFR), chair of the Working Group, said insurance gaps are not only seen in developing economies, coverage gaps exist in California and states across the U.S. Construction standards through building codes and retrofitting properties improve resilience.

Raghuvver Vinukollu (Munich Re) said the report explores combining risk reduction with risk transfer, promoting policy development that recognizes nature-based solutions, and making insurance more affordable and recovery faster.

Katelyn Roedner Sutter (Environmental Defense Fund—EDF) said California is experiencing extreme drought and heat. People with lower incomes, older adults, and people with chronic health conditions are more vulnerable to suffering the effects. Nature-based solutions such as investments in wetlands, urban forests, and ecological forest strategies can reduce damages to health and infrastructure. The EDF has been working to design environmental impact bonds and other market-based financing concepts for investing in wetlands along the coast of the Gulf of Mexico. The Restoration Insurance Services Company (RISCO), with funding by Climate Finance Lab, uses insurance and blue carbon as revenue streams to protect and restore mangroves that reduce flood risk. The Working Group report includes the following nature-based solutions: prioritizing nature-based solutions in city planning, initiating pilot projects on nature-based insurance solutions, linking business investments to nature-based solutions to support resilience, and coordinating with state and federal agencies to develop strategies promoting urban greening, prescribed burning, and sand dune restoration. Engaging local communities and educating residents is critical to the success of these projects. Ms. Sutter said it is important for insurers to get involved and find ways to incentivize risk reduction and resilience.

Serena Sowers (Swiss Re) said the Working Group made recommendations to rank and name heat waves to better communicate the deadly risks to consumers, help communities prepare, and create pilot projects for extreme heat. Ms. Sowers said many of the recommendations are general and adaptable and could apply to all states and multiple climate perils.

#### 4. Heard a Presentation from the RAA on its Resiliency Mapping Tool and Analysis

Dennis Burke (Reinsurance Association of America—RAA) said the RAA is an advocate for using data to identify and communicate risk and plan for mitigation. FEMA published the National Risk Index (NRI) data in late 2020 to help identify communities most at risk to natural hazards. FEMA evaluated natural hazards of 18 perils and combined risk assessment data with social vulnerability and community resilience metrics. Mr. Burke said Scott Williamson (RAA) combined FEMA's NRI data with U.S. Census Bureau data to analyze the economic impact of perils in each state and identify disaster-prone communities that lack the resources to recover from disasters without state or federal assistance. Many disaster-prone communities lack the ability to use federal funding due to the cost-share provisions and FEMA disaster co-payments required. The RAA's tool helps identify resource-constrained communities that would benefit from additional legislative provisions to improve their resiliency. Mr. Burke said President Biden's proposed infrastructure bill includes funding that could be combined with public and private funding to address the needs of these communities which the RAA has termed Community Disaster Resilience Zones (CDRZ). While not formally defined, CDRZ are the most socially and economically at-risk populations of the U.S. The tool could be used by state departments to conduct benefit-cost analysis necessary for federal grant applications because the underlying data was provided by FEMA.

The RAA is promoting the CDRZ Act to improve America's infrastructure, focusing on public and private infrastructure funding to protect America's communities from the increasing threat of natural disasters. The RAA is advocating for direct pay bonds such as Build America Bonds (BABs), private activity bonds, transferrable tax credits for community-level projects and individual homeowner retrofits, and corporate and individual charitable contribution tax credits. Finally, the RAA is advocating to waive the required matching funds for FEMA's BRIC fund due to resource constraints for many communities most in need of the support. The RAA welcomes the support of the NAIC and state insurance regulators in advocating for legislation to improve the resilience of America's communities.

Having no further business, the Climate and Resiliency (EX) Task Force adjourned.

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**MEMORANDUM**

TO: Members of the Climate and Resiliency (EX) Task Force

FROM: Technology Workstream of the Climate and Resiliency (EX) Task Force

DATE: Nov. 22, 2021

RE: Recommendation for the NAIC’s Center for Insurance Policy and Research to Create a Catastrophe Model Center of Excellence

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The NAIC Climate and Resiliency (EX) Task Force charged the Technology Workstream to apply technology, such as predictive modeling tools, to understand and evaluate climate and natural catastrophe risk exposures. In particular, the Technology Workstream was tasked with determining whether technical support services were needed by state insurance departments regarding the industry’s use of catastrophe models.

The Workstream met Aug. 6, June 7, and March 24 in regulator-to-regulator session, pursuant to paragraph 6 (consultations with NAIC staff members related to NAIC technical guidance) of the NAIC Policy Statement on Open Meetings, to hear about NAIC activities related to the use of catastrophe models in insurance. Content included a 2020 Center for Insurance Policy and Research (CIPR) research paper, *Application of Wildfire Mitigation to Insured Property Exposure*, which explores the economic benefits and costs of employing wildfire resilience strategies in nine communities in California, Colorado, and Oregon. Analysis was conducted using the RMS North America Wildfire Models highlighting the benefit of working with catastrophe model vendors for regulatory resilience priorities. Acknowledging the benefit of having a central resource for state insurance regulators regarding catastrophe models, as well the need for its discussed support services, on Sept. 21, the Technology Workstream issued a request for comments on a proposal (Appendix A) for the NAIC’s CIPR to create a Catastrophe Model Center of Excellence (COE). Comments were collected up to its open meeting on Nov. 4, during which the Workstream heard comments on the proposal, answered questions, and clarified the intent of the COE. The Workstream met again on Nov. 22 to provide an overview of a Frequently Asked Questions document (Appendix B), developed to provide answers to the questions received during the open comment period, as well as to provide additional clarification regarding the role of the COE and services to be provided if the proposal is adopted through the Executive (EX) Committee and Plenary.

If adopted, the COE would: 1) facilitate insurance department access to catastrophe modeling documentation and provide assistance in distilling the technical information received; 2) provide general technical education/training materials on the mechanics of commercial models and treatment of perils and risk exposures; and 3) conduct applied research analysis using various model platforms to proactively answer the regulatory “so what” questions that may need to be addressed for regulatory resilience priorities.

The support services offered through the COE will not take the place of individual state insurance department activities involving catastrophe models such as model and rate filing review, nor would the



COE approve vendor models. The COE will engage with all vendors willing to participate for all perils with technical documentation available for state insurance regulators. The COE will establish a governance structure to ensure that the COE remains transparent and impartial. The COE will periodically report to relevant NAIC committees, including the Technology Workstream of the Climate and Resiliency (EX) Task Force and the Catastrophe Insurance (C) Working Group of the Property and Casualty Insurance (C) Committee.

Furthermore, the COE will provide only fact-based information and relevant objective analysis, as requested. The COE will conduct research using catastrophe models to support risk mitigation and resilience efforts, critical for reducing future probable losses.

The COE will safeguard information received from participating catastrophe modeling vendors through legally binding data-use agreements. Some funding will be necessary to support the ongoing work of the COE, including staff salaries and resources for model access. The expenses associated with COE activities would be subject to the NAIC budget process.

The Technology Workstream voted on Nov. 22 to recommend that the NAIC's CIPR create a catastrophe modeling COE. We believe this will be a valuable resource for state insurance departments and recommend that the Climate and Resiliency (EX) Task Force will consider moving the proposal forward to the joint Executive (EX) Committee and Plenary to consider for adoption during the 2022 Spring National Meeting.

[Tech WS COE Recommendation](#)



APPENDIX A

**A Proposal to Establish a Catastrophe (CAT) Modeling “Center of Excellence”  
(COE) within the NAIC’s Center for Insurance Policy & Research (CIPR)**

September 20, 2021

## Introduction

The leadership and members of the NAIC have determined natural CAT risks and resiliency to be a top priority and organized several workstreams to pursue objectives intended to help ensure homes and businesses are protected from insured perils arising from natural CATs, while keeping markets stable through financially strong insurers and reinsurers. For example, the Catastrophe Risk (E) Subgroup has spent many years working to develop risk-based capital (RBC) factors for hurricane and earthquake exposures and, more recently, grappling with how best to address wildfire, flood, and convection storm perils. Separately, the Catastrophe Insurance (C) Working Group is charged with maintaining the NAIC *State Disaster Response Plan*, the *Disaster Assistance Program*, and the *Catastrophe Computer Modeling Handbook*. The Working Group has also commenced work to determine ways in which the private flood market can be facilitated and monitored by the state insurance regulators. The Climate and Resiliency (EX) Task Force has taken on significant work, which will require a deeper understanding of all aspects of climate and natural CAT risks. Further, many state insurance regulators are taking on new roles in working to create risk resilient communities within their jurisdictions.

Given these increased pressures and new roles, state insurance regulators need to improve their understanding of the CAT modeling technologies used by insurers and reinsurers. This means having access to the same knowledge, insights, and tools used by insurers. In doing so, state insurance regulators can more effectively engage with insurers and state and federal policymakers when discussing how best to maintain critical insurance coverages for their states’ economies and developing new regulatory policy. The NAIC can play an instrumental role fulfilling these needs.



In this regard, the Technology Workstream of the Climate and Resiliency (EX) Task Force was assigned the task of considering the potential application of technology, such as early warning systems and predictive modeling tools, to better understand and thereby evaluate insurers' climate and natural CAT risk exposures. In particular, the Technology Workstream was tasked with determining whether technical support services were needed by state insurance departments regarding the industry's use of CAT models.

To help facilitate the members' consideration of such a need, NAIC/CIPR staff conducted two presentations on June 7 and Aug. 6, 2021, wherein staff laid out a range of support services for state insurance departments when encountering the use of commercial CAT models by insurers in rate making processes, solvency functions, and/or other insurance business decisions (e.g., strategic, reinsurance, claims management). NAIC/CIPR staff addressed potential support services in the areas of: 1) facilitating access to CAT modeling documentation; 2) providing technical education and training; and 3) conducting applied research to proactively address regulatory climate risk and resilience priorities. Finally, an additional related benefit highlighted is the ability to provide future support services for other modeled CAT risk beyond climate and natural CATs, including casualty/liability, cyber, terrorism, and infectious diseases such as pandemics. This additional support work could potentially influence other NAIC related committee activities, as appropriate.

## **Proposal**

As outlined in the introduction above, the time has arrived for the NAIC to establish a permanent support group—i.e., the NAIC CAT Modeling COE—to provide the NAIC and state system of insurance regulation with the necessary technical expertise, tools, and information to effectively regulate the insurers and reinsurers exposed to catastrophic events for a secure and stable insurance marketplace. We believe this COE would be best positioned within the NAIC's CIPR given CIPR's: 1) existing knowledge, expertise, and recent NAIC applied research track record in this field; and 2) its ability to effectively work with modelers and state insurance regulators from a neutral perspective within the NAIC. Below is a complementary and integrated series of technical support services envisioned by the COE:

- 1) Facilitating insurance department access to CAT modeling documentation and assistance in the distilling of this information.
- 2) Providing general technical education/training materials on the mechanics of commercial models and treatment of perils and risk exposures.
- 3) Conducting applied research analysis utilizing various model platforms to proactively answer the regulatory "so what" questions that may need to be addressed for regulatory resilience priorities.



The first element from above provides for the CAT Modeling COE to facilitate insurance department access to CAT modeling documentation and other information, as well as centralizing accumulated knowledge and expertise to aid in the deciphering and distillation of CAT models. The COE would assist with managing both CAT model vendor relationships and insurance department needs. As such, the COE would be briefed on the modeling technologies and inputs in a similar fashion as insurers and reinsurers are and have access to the same modeling documentation to develop internal expertise. This knowledge and expertise would then be actively shared with state insurance regulators for use in regulatory processes and other considerations. Critically, this information would be collected and stored on an NAIC regulator-only technological platform with proper CAT modeling vendor Data Use Agreements (DUAs) in place to allow for proprietary model information sharing, part of which has been a stumbling block to regulatory access to date.

The second element from above provides for technical education/training materials on the mechanics of commercial models and treatment of perils and risk exposures for state insurance regulators. Importantly, this technical training would be utilized to enhance regulatory operational activities, thereby bringing the science to operations. For example, it would allow for state insurance departments and the NAIC to reimagine the NAIC [Catastrophe Computer Modeling Handbook](#), which could become the foundational authoritative literature on state insurance regulator use of CAT models. As state insurance regulators gain more practice with these models, the NAIC is also well-positioned to develop best practices on industry use, as well as state insurance regulator use. Consequently, the NAIC [Financial Condition Examiners Handbook](#) and the [NAIC Own Risk and Solvency Assessment \(ORSA\) Guidance Manual](#) could be improved to account for the latest developments and best practices in CAT risk assessment. Further from a solvency perspective, both the development of related RBC CAT charges and climate stress testing would benefit greatly from such a technical foundation.

The third element from above provides for conducting applied research analysis to utilize various model platforms to proactively answer the regulatory “so what” questions that may need to be addressed. CAT models are not limited to use by the insurance industry; they are tools for CAT risk assessment. State insurance regulators can apply these tools in much the same way as the industry, albeit for regulatory resilience priorities (e.g., how to increase the uptake and proliferation of home hardening activities related to hurricane and wildfire risk). Such mitigation activities are critical to reduce expected losses and improve the availability and affordability of coverage currently and in a future warming climate. Applied research utilizing CAT models can demonstrate the economic value of such mitigation activities, laying the proper foundation for policy discussions to address increasing property owner mitigation implementation.

Lastly, it is important to note that these identified support services will not be taking the place of individual state department of insurance (DOI) activities involving CAT models, such as model and rate



filing reviews, nor will the CAT Modeling COE be approving vendor models. Rather, the support services will allow the COE to engage with state insurance regulators as a trusted partner with a sufficient level of CAT modeling expertise to enable the conduction of ongoing CAT modeling regulatory activities more effectively.

## Plan of Action

In the past year, many of the above support services have already transpired and/or are currently underway. These include: 1) regulator-only technological platform infrastructure development and DUA executions; 2) NAIC Insurance Summit and CIPR events focused on CAT modeling education concerning wildfire and flood models, CAT model climate change incorporation and climate risk assessment, and casualty CAT modeling; 3) successful completion of a California, Colorado, and Oregon DOI [wildfire mitigation report](#) and wildfire CAT model technical documentation done in conjunction with the Insurance Institute for Business & Home Safety (IBHS) and Risk Management Solutions (RMS), which was further leveraged by the Catastrophe Risk (E) Subgroup for wildfire RBC factor development and the Catastrophe Insurance (C) Working Group *Catastrophe Computer Modeling Handbook* updates. Therefore, this proposal will not be to start such CAT modeling COE support service activities, but rather to build upon and leverage these activities for further enhancement and formalization at the NAIC.

Following the meeting of the Technology Workstream on Aug. 6, 2021, the proposal was released to the member states for further comments and questions. Comments were considered, and a revised proposal was approved for public exposure by the Technology, Solvency, and Pre-Disaster Mitigation Workstreams on Sept. 20, 2021.

Following the Sept. 20 regulator-only meeting, the proposal was released to interested parties for further comment and questions for 30 days. Comments will be considered by the Technology Workstream following this feedback and revisions may be made to the proposal, as agreed upon.

If the proposal advances through the above process steps, it will be prepared for recommendation to the Climate Risk and Resiliency (EX) Task Force at the NAIC 2021 Fall National Meeting in San Diego, CA.

We anticipate there would be no new charges associated with creation of the COE; i.e., the expenses associated with the COE resources would be effectively absorbed by the NAIC budget and have no special assessments, fee for services, etc. These resources may include: 1) recruiting a vendor/insurance department CAT modeling relationship manager and a CAT model research analyst; 2) funding for education/training development and implementation and the licensing and/or running of models for applied research to support and/or enhance regulatory operational activities; and 3) addressing regulatory resilience priorities.



## Conclusion

In the face of extreme weather and the future climate significantly affecting property insurance markets, state insurance regulators need to have access to the same knowledge, insights, and CAT modeling tools used by insurers and reinsurers to assess and address climate risk and resiliency; i.e., knowledge and tools that are available for state insurance regulators to access, understand, and utilize. To accomplish this, we propose that the NAIC establish a permanent support group—i.e., the NAIC CAT Modeling COE—housed within the NAIC’s research unit; i.e., CIPR. We have laid out a proposal and plan of action that would build upon the work that the NAIC/CIPR has already been conducting around climate and CAT risks and allows the NAIC/CIPR to bring science to the operation of the DOIs in a way that is additive to the existing regulatory system, easy to access, and tailored to the needs of the state insurance regulators.

We welcome feedback on the proposal and plan of action. Please send questions or comments to Jennifer Gardner at [jgardner@naic.org](mailto:jgardner@naic.org).

[CATModelCOE Proposal](#)



APPENDIX B

**NAIC/Center for Insurance Policy and Research (CIPR) Catastrophe  
Model  
Center of Excellence (COE)  
Frequently Asked Questions (FAQ)  
November 16, 2021**

**Governance & Oversight**

**Topic: Vendor and Insurer Continued Engagement with Departments of Insurance (DOIs)**

**Is the intent for the COE to become the primary point of contact between state insurance regulators and modelers?**

No. As stated in the proposal, “identified support services will not be taking the place of state DOI activities involving CAT models, such as model and rate filing reviews, nor will the CAT Modeling COE be approving vendor models.” However, we do envision the COE providing access to CAT modeling expertise to support state insurance regulator understanding, training, etc.

**Will state insurance regulators continue to be open to discussions with modelers (and insurers) about models?**

Yes. In fact, the COE will seek to improve communication between state insurance regulators and modelers/insurers, supplying state insurance regulators with expertise and information to help facilitate such discussions.

**Topic: Transparency and Potential Bias of Modeled Results/Usage**

**How will the COE engage with interested stakeholders to remain transparent?**

Most NAIC support resources interact with a committee for reporting and oversight. In this instance, at least for now, we propose that the catastrophe resource center will report to the Technology Workstream under the Climate and Resiliency (EX) Task Force, as well as coordinate with the Property and Casualty Insurance (C) Committee.



### **How will the COE work to ensure impartiality of vendor models?**

The COE will make every effort to engage with all vendors willing to participate for all perils with available technical documentation. Furthermore, the COE will establish a governance structure to ensure that partiality is not provided to any model or vendor.

### **Would the COE be engaging to connect learnings from the CAT model to specific insurer rate-making, solvency, and/or business—i.e., strategic, reinsurance, claims management—decisions?**

The COE support services will not take the place of state DOI activities involving CAT models, such as model and rate filing reviews, nor will the CAT Modeling COE be approving vendor models. The COE will work to understand models objectively from a general sense, not for individual rate filings or solvency assessments. We acknowledge that each insurer has their own risk profile that would need to be considered on an individual basis, which is outside the scope of the COE.

#### **Topic: Objective Science**

### **Would the kind of information the COE conveys be facts-based or would it include opinions or analysis?**

The information provided to the state DOIs would be fact-based with relevant objective analysis, as requested. Providing this type of information to states highlights the importance of the placement of the COE within the NAIC's independent research center, the CIPR.

#### **Topic: Addressing Regulatory “So What” Questions Through Applied Research**

### **What are regulatory “so what” questions in support service #3 of the proposal conducting applied research analysis?**

State insurance regulators are responsible for maintaining well-functioning competitive insurance markets. Forward-looking models can be utilized to help analyze market performance, especially regarding the need for improved resilience. As stated in the proposal, CAT models are tools for catastrophe risk assessment. State insurance regulators can apply these tools in much the same way as the industry, albeit for regulatory resilience priorities. For example, models can be used to identify high-risk areas and where proliferation of home hardening activities can improve resilience to natural hazards, including hurricane, flood, severe convective storm, tornado, wildfire, and earthquake. Such mitigation activities are critical to reduce probable losses. Lower losses over time can improve the



availability and affordability of coverage in the future. Applied research utilizing CAT models can demonstrate the economic value of mitigation activities. One description provided via public comments that we considered useful is, “conducting applied research analysis that utilizes or analyzes the potential to utilize CAT models to further public and private risk mitigation and resiliency efforts; benefits and opportunities at the individual consumer or business; or public agency at the community, regional, state, or national level.”

**Regarding conducting applied research analyses utilizing CAT models, we would like to understand the research and support expectations from the COE on modelers.**

We envision working with modelers on applied research activities as applicable. We are requesting funding to allow for modeler engagement.

**Depending on the expected level of granularity for COE work, additional questions may be relevant, such as whether the COE (NAIC/CIPR) would need to be prepared to go to a hearing to testify or respond to discovery?**

It is not anticipated that the COE would maintain granular information about individual insurer use of CAT models. The level of detail would be around the actual CAT model to provide education and training to state DOIs.

**Will the COE be used to conduct research and analysis into the markets for CAT models. Will conflicts of interest or market failures distort the use of CAT models?**

No. It is not envisioned that the COE would set out to conduct this type of research and analysis.

## **Implementation Considerations**

### **Topic: COE Communication of Various Results, Information, and Observations to DOIs**

**Given the complexity of models and breadth of expertise required to build and maintain them, there is a risk that any third party cannot adequately communicate the nuances and justification of models. Will the COE plan to coordinate model presentations from the modelers, rather than only relaying this information second-hand?**

Yes. The COE would plan to coordinate model presentations from modelers.

**How will information, observations, and/or questions about models be conveyed to state insurance departments? What kind of output will be generated?**



We plan to hire a relationship manager responsible for communicating with the CAT model vendors and state insurance regulators. A regulator-only technology platform will help facilitate information sharing with state insurance regulators. Research output could take multiple forms depending upon the nature of the analysis undertaken.

**What kinds of data fields will be included? Will others provide input into the design?**

The data fields selected would be contingent on the models being used and the research project under consideration. Data fields would follow from model inputs and outputs.

**Will the COE reviews and/or output be designed to be geography-specific?**

Yes. That is possible.

**Once a model has been reviewed, what renewal process is envisioned?**

Models will not be reviewed, nor would they be posted on the state insurance regulator-only website. However, model technical documentation and information will be updated as new versions of the models are released.

**Topic: Model Vendor Intellectual Property (IP) Protection**

**How will the COE safe-guard intellectual property of the participating CAT model vendors?**

All modeling documentation, access, and usage will be centralized and monitored through the COE via legally binding data use agreements. The NAIC has an extensive track record of experience in collecting and protecting proprietary information. The actual models will not be posted on the state insurance regulator website, only the model documentation will be posted.

**Topic: Interaction with Modelers and Other External Experts**

**Will modelers engage in discussions with the COE about specific models? Do you expect insurers would be involved in model-related discussions?**

Yes. The COE would be engaged with modelers on the modeling technologies and inputs in a similar fashion as insurers and reinsurers and have access to the same modeling documentation to develop internal expertise. It is possible that insurers could be involved in model-related discussions with the COE, but the COE will not review individual insurer's use of models.



**Is the CIPR planning to license and use modeler software or engage in paid consulting studies for their research and development of processes?**

Yes, depending on COE resources and the specific research use case. The CIPR would be willing to either license modeler software and/or engage in paid consulting studies for research and educational/training purposes, as directed by the appropriate NAIC authorities.

**How will results and underlying assumptions from licensed models be communicated to state insurance regulators?**

Any use of a licensed model, including distribution of modeled results, would be subject to the model license agreement and/or model vendor negotiated research consulting contract. Underlying assumptions from the various models utilized would be collected via the model technical documentation as part of the model vendor data use agreement. Note that it is possible that the model technical documentation, including underlying model assumptions, could be collected through a COE data use agreement without an associated model-based research project. If we were to license a model, the actual model would not be posted on the state insurance regulator-only website.

**Will modelers be involved in establishing workflows, best practices, agendas, and expectations of the COE, including timing?**

We anticipate that modelers will be actively engaged with the COE staff, advising on these items as appropriate.

**How many vendors is the COE considering supporting?**

The COE will not be “supporting” vendors, but rather the COE will collect model documentation and engage with model vendors. The COE will engage with any model vendor serving insurance markets where the information is relevant to state insurance regulators.

**Does the COE anticipate looking to external experts for some of the implementation or ongoing work?**

Yes. External collaboration would be welcome, whether that be with industry experts, public agencies, or the academic community.

**Topic: Resources - Staffing and Funding**

**How many states do you expect to be interfacing with the COE?**

The COE will be a resource of the NAIC potentially interfacing with all 56 jurisdictions.



**Beyond recruiting for the identified new roles of CAT modeling relationship manager and CAT model research analyst, how many people at the NAIC/CIPR will be contributing to COE activities? Do you expect that to change over time?**

The CIPR director, the NAIC solvency enterprise risk management (ERM) advisor, and potentially Property and Casualty Insurance (C) Committee staff support will have a role in supporting the work of the COE. We anticipate that additional technical and administrative support resources may be necessary as the workload and demand for services evolve with demonstrated success.

**Will the staffing level proposed by the NAIC be able to provide meaningful analysis in the broad category of catastrophe modeling?**

Prior to the creation of the COE, CIPR and NAIC staff have provided meaningful analysis on wildfire CAT modeling and applied wildfire resilience research. We aim to build off this success and need to start somewhere. Every little bit helps for the states, as stated by one industry commenter, “[t]he staffing issues mentioned above regarding experts at the NAIC are even larger for state insurance departments. Most states are not going to have enough or the right staff to review these models. They will have to rely on others to evaluate catastrophe model validity, and most likely will have to rely heavily on the decisions and evaluations made by others.”

**Have long-term plans been prepared? Are there budget implications?**

No long-term plan has been developed for the COE. The expenses associated with the COE would be subject to the NAIC budget process and have no special assessments or fees for service.

[CIPR COE FAQ](#)

## PROPOSED REDESIGNED NAIC CLIMATE RISK DISLCOSURE SURVEY

### PURPOSE STATEMENT

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The purpose of the *Climate Risk Disclosure Survey* is to:

- Enhance transparency about how insurers manage climate risks and opportunities as well as identify good practices and vulnerabilities.
- Provide a baseline supervisory tool to assess how climate-related risks may affect the insurance industry.
- Promote insurer strategic management and encourage shared learning for continual improvement.
- Enable better-informed collaboration and engagement on climate-related issues among regulators and interested parties.
- Align with international climate risk disclosure frameworks to reduce redundancy in reporting requirements.

Link to NAIC Survey: <http://www.insurance.ca.gov/0250-insurers/0300-insurers/0100-applications/ClimateSurvey/upload/QUESTIONS-AND-GUIDELINES-CLIMATE-RISK-SURVEY-REPORTING-YEAR-2020.pdf>

Link to Financial Stability Board's Task Force for Climate-related Financial Disclosure (TCFD) Recommendations (see pdf pg. 22/doc pg. 14):

<https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf>

**Narrative and closed ended questions follow, grouped into the Financial Stability Board's Task Force for Climate-related Financial Disclosure (TCFD) four topics.**

**Can be presented as (1) two separate parts of the same survey, narrative and closed ended, with option to attach narrative answers as file if it exists already (e.g., like current TCFD reports) so that only closed ended need to be completed, or (2) closed ended questions directly incorporated into narrative questions, with possible option to attach a report and only answer closed ended questions.**

***Italics* indicate that the question is copied from TCFD.**

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**Governance – narrative questions**

1. *Disclose the organization's governance around climate-related risks and opportunities.*
  - Identify and include any publicly stated climate risk goals
  - Describe where climate risk disclosure is handled within the organization’s structure, e.g., at a group level, entity level, or a combination. If handled at the group level, describe what activities are undertaken at the company level.
  - A. *Describe the board's oversight of climate-related risks and opportunities.*
    - Describe who on your board or committees is responsible for the oversight of managing the climate-related financial risks.
  - B. *Describe management's role in assessing and managing climate-related risks and opportunities.*

**Governance – closed ended questions answered in addition to the narrative**

1. Is Climate Risk Governance done at a group level, entity level, or a combination? (Multiple-choice answers)
  - a. Based on answer/if group level: Are any activities undertaken at the Company Level? (Y/N)
2. Does the company have publicly stated climate risk goals? (Y/N)
3. Does your board have a member, members, a committee, or committees responsible for the oversight of managing the climate-related financial risk? (Y/N)
4. Does management have a role in assessing and managing climate-related risks and opportunities (Y/N)

**Strategy – narrative questions**

2. *Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.*
  - Describe how the company defines materiality.
  - Describe the steps the company has taken to engage key constituencies on the climate risk and resiliency.
  - Describe the companies plan to assess, reduce, or mitigate its greenhouse gas emissions in its operations or organizations.
  - A. *Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term by completing the chart below.*
    - Define short, medium, and long-term, if different than 1-5y as short term, 5-10y as medium term, and 10-30y as long term.

Time Horizon	Risks	Opportunities
Short-term		
Medium-term		
Long-term		

- B. *Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.*
- Discuss how the company provides products or services, or makes investments, to support the low carbon transition or help customers adapt to climate risk? (This can include underwriting and/or investments.)
- C. *Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2 degree Celsius or lower scenario.*

### **Strategy - closed ended questions answered in addition to the narrative**

1. Has the company taken steps to engage key constituencies on the topic of climate risk and resiliency? (Y/N)
2. Does the company provide products or services, or make investments, to support the low carbon transition or help customers adapt to climate risk? (This can include underwriting and/or investments.) (Y/N)
3. Does the company have a plan to assess, reduce or mitigate its greenhouse gas emissions in its operations or organizations? (Y/N)

### **Risk Management – narrative questions**

3. *Disclose how the organization identifies, assesses, and manages climate-related risks.*
- Describe how the company considers the impact of climate related risks on its underwriting portfolio, and how the company is managing its underwriting exposure with respect to physical, transition and liability risk.
  - Describe any steps the company has taken to encourage policyholders to manage their potential climate related risks.
  - Describe how the company has considered the impact of climate related risks on its investment portfolio, including what investment classes have been considered.
- A. *Describe the organization's processes for identifying and assessing climate-related risks.*
- Discuss whether the process includes an assessment of financial implications.
  - Discuss how frequently the company go through the process to assess climate-related risks.
- B. *Describe the organization's processes for managing climate-related risks.*
- C. *Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.*
- Discuss whether climate-related risks are addressed through the company's general enterprise-risk management process or a separate process

- Discuss how frequently the company goes through the process to identify climate-related risks
- Describe the potential impact of climate related risks on the company's underwriting portfolio and how the company is managing its exposure with respect to physical, transition and liability risk.
- Describe how the company considers the impact of climate-related risks on its investment portfolio.

### **Risk Management – closed ended questions answered in addition to the narrative**

1. Does the company have a process for identifying climate-related risks? (Y/N)
  - A. If yes, are climate-related risks addressed through the company's general enterprise-risk management process? (Y/N)
  - B. If yes, how frequently does the company go through the process to identify climate-related risks? (Multiple choice, e.g., annually, etc.)
2. Does the company have a process for assessing climate-related risks? (Y/N)
  - A. If yes, does the process include an assessment of financial implications? (yes/no)
  - B. If yes, how frequently does the company go through the process to assess climate-related risks? (Multiple choice)
3. Does the company have a process for managing climate-related risks? (Y/N)
4. Has the company considered the impact of climate-related risks on its underwriting portfolio? (Y/N)
5. Has the company taken steps to encourage policyholders to manage their potential climate-related risks? (Y/N)
6. Has the company considered the impact of climate-related risks on its investment portfolio? (Y/N)

### **Metrics and Targets – narrative questions**

4. *Disclose the metrics and targets used to assess and manage relevant collateralized risks and opportunities where such information is material.*
  - Describe how your organization uses catastrophe modeling to manage the climate-related risks to your business.
  - Specify for which climate-risks the company uses catastrophe models to assess. (Property, Casualty, Life, Health)
  - Discuss the climate scenarios utilized by the company to analyze its underwriting risks, including which risk factors the scenarios consider, what types of scenarios are used, and what timeframes are considered.
  - Discuss the climate scenarios utilized by the company to analyze risks on its investments, including which risk factors are utilized, what types of scenarios are used, and what timeframes are considered.
  - A. *Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.*

- In describing the metrics used by the company to assess and monitor climate risks, consider the amount of exposure to business lines, sectors, and geographies vulnerable to climate-related physical risks [answer in absolute amounts and percentages if possible], alignment with climate scenarios, [1 in 100 years probable maximum loss, Climate VaR, carbon intensity], and the amount of financed or underwritten carbon emissions)
- B. *Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.*
- C. *Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.*

### **Metrics and Targets – closed ended questions answered in addition to the narrative**

1. Does your company use catastrophe modeling to manage your company's climate-related risks? (Y/N)
  - A. If yes, for which climate-related risks does the company use catastrophe models? [Property, Casualty, Life, Health]
  - B. If yes, how does the company use catastrophe modeling to manage climate-related risks? [Financial solvency, underwriting, other – please describe]
2. Does the company use metrics to assess and monitor climate-related risks? (Y/N)
3. Does the company have climate-related targets? (Y/N)
4. Has the company utilized climate scenarios to analyze their underwriting risk? (Y/N)
  - A. If yes, which risk factors do the scenarios consider? [Physical, Transition, Liability]
  - B. If yes, what type of scenarios are used? [Multiple-choice]
  - C. If yes, what timeframes are considered? [Multiple-choice]
  - D. If no, does the company expect to develop scenario analysis for underwriting in the future?
5. Has the company utilized climate scenarios to analyze their investment risk? (Y/N)
  - A. If yes, which risk factors do the scenarios consider? [Physical, Transition, Liability]
  - B. If yes, what type of scenarios are used? [Multiple-choice]
  - C. If yes, what timeframes are considered? [Multiple-choice]
  - D. If no, does the company expect to develop scenario analysis for investment management in the future?