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Pre-Disaster Mitigation and Risk Modeling (EX) Working Group
Virtual Meeting
March 25, 2026

The Pre-Disaster Mitigation and Risk Modeling (EX) Working Group of the Natural Catastrophe Risk and Resilience (EX Working Group met March 25, 2026. The following Working Group members participated: Timothy J. Temple, Chair (LA); Glen Mulready, Vice Chair (OK); Tom Zuppan (AZ); George Bradner (CT); Sharon Shipp (DC); Jackie Horigan (MA); Joy Hatchette (MD); Sandra Darby (ME); Parker Fisher (MI); Peter Brickwedde (MN); Andy Case and John Thornton (MS); Connie Van Slyke (NE); Cherry Mui (NY); and David Forte (WA).

1. Discussed its Charges and Responsibilities

Commissioner Temple said that in 2026, the Working Group will be tasked with several items, including considering a model law for state mitigation programs and developing a long-term vision for the Catastrophe Risk Management Center of Excellence (COE).

He said these initiatives fully support the first and third Working Group charges and said that Working Group members will receive a more specific work plan on how the Working Group will accomplish these items. The Working Group members and the charges were distributed to all members before the meeting began. There were no questions or comments.

2. Heard a Presentation on the CIPR and the COE

The Working Group heard a recap of the March 23 Center for Insurance Policy and Research (CIPR) event with the Insurance Institute for Business & Home Safety (IBHS). Brian Powell (NAIC) provided an update on the CIPR and COE and listed several activities.

First, regarding legislative activity, Powell said that currently, five states are engaged in some level of legislative action related to resilience and mitigation programs. Additional states are expected to introduce legislation in the coming year. The COE and Resilience Hub are actively supporting these efforts by assisting in drafting legislative language and providing guidance and technical support.

Second, regarding program expansions and launches, he said the South Carolina Safe Home Program has expanded to adopt the IBHS Fortified standard, transitioning from a coastal-focused program to a statewide program. He said Kentucky has recently launched its mitigation program. Approximately 200 grants have been issued to date. The program has successfully completed its first FORTIFIED home. In Maine, the state mitigation program is expected to launch soon and will adopt the IBHS FORTIFIED standard. He added that Maine is notably incorporating tree-fall mitigation and other unique elements beyond typical state programs.

Powell also said that the COE has rolled out new tools and capabilities, including economic impact analysis as a new support tool. He said that currently, it is being used by Hawaii to support legislative efforts. Its purpose is to help states demonstrate return on investment (ROI) for mitigation programs, support requests for additional funding and expanded program authority, and assist with program scaling and growth.

Powell said the COE continues to host visits to the IBHS Research Facility in Richburg, SC, for state insurance department staff and legislators. A recent visit three weeks prior was attended by representatives from seven states. Another visit is planned for Sept. 23 and is recommended for states exploring FORTIFIED programs, new

staff requiring training, and states launching or expanding mitigation initiatives. He said these visits provide hands-on exposure to IBHS FORTIFIED standards along with broader education on mitigation programs and resilience strategies. In closing, Powell said attendees were encouraged to reach out to the COE for participation in training opportunities and support in developing or expanding state programs.

3. Heard a Presentation from IBHS on SCS

Michael Newman (IBHS) gave a presentation on severe convective storms (SCS), focusing on wind- and hail-related damage to residential roofs. He referenced ongoing discussions at the meeting regarding wildfire risk, including a recent tour of a wildfire-prepared neighborhood and related presentations by colleagues.

Newman provided an overview of IBHS, explaining that it is a nonprofit organization funded entirely by the property insurance industry, which has invested more than a quarter billion dollars over the past 16 years. This funding supports scientific research and large-scale experiments to identify affordable, effective, and practical mitigation strategies for homeowners and communities. The overarching goal of IBHS is to improve the survivability and insurability of homes, businesses, and communities in the face of severe weather.

The presentation then turned to trends in severe convective storm losses. From 1990 through 2022, losses increased steadily at an average annual rate of 8.9%. However, a significant shift occurred in 2023 and 2024, when insured losses surged to approximately \$123 billion over the two-year period. This level of loss far exceeds historical benchmarks, including the combined impacts of major hurricane years such as 2004 and 2005. Newman emphasized that, despite receiving less public attention than hurricanes, severe convective storms are now a major and growing driver of insured losses. This elevated loss trend has continued, with annual losses exceeding \$50 billion in recent years and early indications suggesting that 2026 may follow a similar pattern.

He explained that severe convective storms affect a broad geographic area across the U.S., extending well beyond traditional regions such as “Tornado Alley” or “Hail Alley.” Hail and wind were identified as the primary drivers of loss, with hail representing the larger share. The discussion first focused on wind, particularly its impact on roofing systems.

Drawing on decades of IBHS research, Newman highlighted the vulnerability of roofs—especially asphalt shingle roofs, which are the most common in the U.S. The key factor influencing roof performance was identified as age. While roofs may continue to shed water effectively over time, the sealant that bonds shingles degrades, reducing resistance to wind uplift. Laboratory observations demonstrated that even a 10-year-old roof can have shingles lifted by hand, illustrating the extent of degradation.

Empirical findings from a study of a 2020 derecho event showed that a 10-year-old asphalt shingle roof has a one-in-12 chance of visible damage at wind speeds of 60 miles per hour, increasing to a one-in-four chance at 90 miles per hour, and approaching near certainty at higher wind speeds. Newman emphasized that 10 years represents a critical performance threshold for asphalt shingle roofs under high-wind conditions, regardless of how such products are marketed.

Newman introduced IBHS “roofing road maps,” which compare the performance of different roofing materials over time. Metal and properly installed tile roofs were shown to offer significantly longer performance lifespans—often decades—while asphalt shingles typically provide reliable performance for only a limited number of years. As a mitigation solution, Newman highlighted the IBHS FORTIFIED program, a voluntary standard for new construction and re-roofing designed to reduce damage from wind, hurricanes, and hail. The program includes three increasing levels of resilience and has been shown to significantly reduce damage, including up to 80% of tornado-related losses based on analysis of events between 2014 and 2022.

The presentation then shifted to hail, which accounts for approximately 70% of severe convective storm losses. Newman illustrated the scale of hail impacts, noting that a typical storm can result in hundreds of thousands of impacts on a single residential roof. Asphalt shingles were identified as particularly vulnerable, being significantly more susceptible to damage from repeated small hail impacts. In high-risk regions, roof lifespans are dramatically shortened, often lasting only five to seven years, and in some areas as little as three years.

To address this vulnerability, Newman discussed the use of impact-resistant shingles, which perform better than conventional shingles. While performance gains are modest when new, they increase over time as conventional shingles degrade. IBHS conducts independent testing of these products and publicly rates them based on their resistance to various forms of hail damage, including tearing, breaching, and granule loss. These ratings are intended to inform consumers, insurers, and regulators about product performance and support better decision-making.

He returned to the broader concept of roofing road maps to emphasize that different roofing materials perform differently over time and under varying hazard conditions, reinforcing the importance of aligning expectations with actual performance characteristics.

The presentation concluded with an illustration of the financial impact of major severe weather events, including tornado outbreaks and individual catastrophic storms, which have resulted in billions of dollars in insured losses. Newman emphasized that a significant portion of these losses is preventable through the adoption of proven mitigation strategies. They noted that meaningful reductions in losses are achievable through coordinated action among homeowners, insurers, regulators, builders, and manufacturers, supported by existing scientific evidence.

Stolyarov inquired about the real-world performance of asphalt shingles marketed with long-term warranties, including products advertised as having 50-year lifespans. The question specifically referenced high-rated architectural shingles and whether such products maintain strong wind resistance after 10 years or more. In response, Newman clarified that IBHS product ratings referenced in the presentation apply specifically to hail performance and should not be interpreted as indicators of wind resistance. He further noted that while asphalt shingles are often marketed with extended warranties, these warranties may not reflect actual performance under severe weather conditions. Attendees were encouraged to review warranty terms carefully and to consider IBHS research findings, which indicate that asphalt shingle performance against wind tends to decline significantly over time, particularly after the 10-year mark.

Commissioner Mulready asked whether asphalt shingles might eventually be excluded from mitigation programs such as the FORTIFIED standard, given their comparatively lower durability relative to materials like metal or tile. Newman responded that a range of roofing materials must remain available due to varying price points and affordability considerations. While more durable materials may offer longer-term benefits, asphalt shingles continue to serve an important role by providing homeowners with accessible options. He also noted the emergence of innovative roofing products that may further expand market choices.

Darby asked about lifecycle cost considerations, specifically whether repeated replacement of asphalt roofs over time may ultimately be less economical than investing in more durable materials upfront. Newman acknowledged this as an important consideration and emphasized that affordability should be evaluated over the long term rather than based solely on initial cost. IBHS aims to provide consumers with data to support informed, economically rational decisions, particularly given that a home is typically a household's largest financial investment.

Additional discussion focused on how IBHS evaluates and incorporates new roofing materials. Amy Bach (United Policyholders—UP) asked about the organization’s process for vetting emerging products. Newman explained that IBHS is not a commercial testing facility but does receive frequent inquiries from vendors. Due to limited testing capacity, the organization must balance ongoing research on established materials with the evaluation of new products gaining market traction. IBHS works closely with industry members to monitor innovations and prioritize testing efforts accordingly.

Participants also discussed the need for broader promotion and adoption of mitigation programs. One participant emphasized the importance of increased outreach and marketing to raise consumer awareness of FORTIFIED standards and encouraged continued collaboration among insurers, contractors, and other stakeholders to expand adoption.

Questions were raised regarding engagement with the construction and contractor community. Newman highlighted that proper installation is critical to the effectiveness of mitigation measures and explained that only trained and certified contractors are eligible to install FORTIFIED roofs. IBHS provides training through its online platform, where contractors must complete coursework and pass an examination to become certified. Certified contractors are then listed in a directory and are eligible to perform FORTIFIED installations. Newman also noted ongoing collaboration with manufacturers, training organizations, and state partners to build the necessary workforce infrastructure, particularly in states launching new grant programs.

State representatives provided examples of these efforts in practice. Brickwedde described an upcoming contractor training initiative, developed in partnership with IBHS and industry groups, that emphasizes equipping contractors to communicate directly with homeowners about mitigation options. It was noted that, in some states, contractor participation tends to increase rapidly once consumer demand for FORTIFIED roofing becomes evident, creating a self-reinforcing cycle of adoption.

Finally, a clarifying question was raised regarding contractor certification requirements. Newman confirmed that contractors do not need to be affiliated with a specific manufacturer to become certified as FORTIFIED installers, provided they meet IBHS training and licensing requirements.

4. Discussed the Potential Development of a Model Law on Mitigation Grant Programs

The Working Group discussed the potential development of a model law on mitigation grant programs. Commissioner Temple said he wants the model to be flexible enough for any state to use for any peril they choose, yet consistent enough from state to state that insurers and legislators can look at other states, see similar working programs, and quickly support their adoption. He discussed Louisiana’s effective law and how many opportunities they have had to apply grant funds to more FORTIFIED roofing using IBHS standards. Commissioner Temple said, hopefully this NAIC model law would provide some consistent guidance for states developing mitigation programs by standardizing process and metrics, premium, discount calculations, certification, and data gathering strategies and documentation requirements built on an established framework (e.g., IBHS-aligned practices), and enable the NAIC to provide supporting tools and resources and ensure uniform program administration. This consistency helps insurers and stakeholders better plan, budget, and support long-term risk reduction efforts.

Commissioner Fowler said a similar program in his state has already proven its effectiveness in Hurricane Sally and recommended a report on his state’s website about the Alabama program.

Several members had questions about whether the model law would be standard-agnostic (not limited to IBHS standards) and multi-peril to account for states with high wildfire risk. Commissioner Temple said both topics

would be discussed during development. He stressed that even if the standards in the model are not “branded” as IBHS, they must be consistent across states and with currently accepted standards. He noted that if the industry is going to give discounts and credits for these types of mitigation efforts, there has to be belief in the product, and uniformity

Commissioner Mulready also voiced his support. He encouraged others to read the research study conducted by the University of Alabama and the Alabama Department of Insurance on non-FORTIFIED home roofs, code-fortified roofs, and grant-fortified roofs, and how much better true IBHS-FORTIFIED roofs performed.

Commissioner Temple asked members to join a drafting group. He reiterated his support for a multi-peril product that could cover wind, flood, wildfire, and other perils.

5. Discussed Real-Time Events Modeling Capability for States

Jeff Czajkowski (CIPR) introduced a potential new initiative under consideration by the COE, framing it as a prospective addition to the set of tools available to states. The discussion was situated within the Working Group’s broader charge to identify next steps and future priorities for the COE.

Czajkowski described the current approach state departments of insurance use to respond to catastrophe events, using a hurricane scenario as an example. Under the existing process, meaningful loss data is typically not available until several weeks after landfall, often 20 to 30 days or more, as regulators rely on outreach to insurers or formal data calls conducted after the event. This delay occurs despite the need for timely information to support decision-making, particularly given the relatively short timeframe for making disaster assistance determinations at the state and federal levels. As a result, states often face pressure to provide estimates and situational updates to governors, emergency management agencies, and other stakeholders without having access to timely or complete loss data. Czajkowski noted that this challenge is not limited to hurricanes, citing recent flooding events in Hawaii as an example of how states must quickly assess impacts even when insurance data may be limited.

In contrast, Czajkowski outlined a proposed future-state approach centered on catastrophe modeling to generate near-real-time loss estimates before and during an event. Under this model, states would begin receiving estimated loss information earlier in the storm lifecycle, potentially days before landfall, based on forecast data. These estimates would then be continuously updated as the event unfolds and as additional information becomes available. The proposed approach would allow increasingly refined estimates over time and the capability to analyze impacts at various geographic levels, including down to the ZIP code level.

Czajkowski explained that adopting such a capability could provide several benefits. More timely access to loss estimates would enhance regulators’ ability to monitor solvency and market impacts, improve coordination with emergency management partners, and enable departments of insurance to play a more central role in disseminating loss-related information across state agencies. The availability of near real-time insights could also support more informed communication with consumers and policymakers, even if such communications are limited to general expectations rather than precise loss figures. Additionally, the approach could leverage existing data collection efforts, such as ZIP code-level homeowners data, and create a modeling “footprint” that could be used for future analysis by the COE.

Czajkowski noted that many insurers already use similar modeling tools internally to estimate losses and prepare operational responses in advance of storms, including staging claims resources and monitoring potential exposures. In that context, the proposal aligns with the broader vision of the COE to provide regulators with tools and capabilities comparable to those used by the industries they oversee.

At the same time, Czajkowski acknowledged several considerations and potential challenges associated with the proposal. These include the cost of implementing and maintaining modeling capabilities, whether through existing licensed tools or third-party vendors, as well as the inherent uncertainty in modeled estimates, particularly in the early stages of an event. Czajkowski also noted that introducing real-time modeling could require additional staff attention during already demanding pre- and post-event periods, and that the approach would represent a new operational process for many states.

Czajkowski concluded by noting that the concept has been discussed with regulators in prior forums and has received general support. The purpose of presenting the concept to the Working Group was to solicit feedback on whether this initiative represents a worthwhile investment of COE time and resources, with the potential to begin development in 2026. The Working Group expressed support for moving forward with the initiative.

Having no further business, the Pre-Disaster Mitigation and Risk Modeling (EX) Working Group adjourned.