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PUBLIC WILDFIRE CATASTROPHE MODEL FACT SHEET (UPDATED)

In response to the recently signed bill, SB 429 (California Insurance Code §970 *et al*), the Department of Insurance is pleased to announce the forthcoming process to implement the ***Wildfire Safety and Risk Mitigation Program*** ("Program") for the purpose of funding the creation of a research and education center ("Center") within one or more eligible universities that will develop and deploy public wildfire catastrophe modeling tools ("Model") that provide multiple benefits to the public.

Catastrophe models are used to estimate the *probability* of loss from *possible* future extreme or catastrophic events, since historical loss data may not reflect current or near-term conditions. They simulate thousands of plausible catastrophic events scenarios based on realistic parameters derived from the science of the peril being modeled, its loss drivers, and the mitigation strategies employed to reduce future losses. These models quantify the financial impact from a range of potential disasters by estimating a range of direct, indirect, and certain types of residual losses. (Insurance Topics | Catastrophe Models Property | NAIC). For additional technical information on wildfire catastrophe models, please review attached Appendix A.

This Department initiative hopes to receive applications from more than one consortium comprised of interdisciplinary teams from one or more universities that brings together expertise in fire science, wildfire risk mitigation, actuarial science, data and computational science, and any other required discipline, and that can demonstrate the capacity to deploy the Model. In addition, the Center must show initiative, capacity, and commitment to proactively identify and engage with key stakeholders and potential end-users involved in insurance regulation; local and regional wildfire risk reduction efforts; local, state, and federal emergency planners; land-use, city, and community planning; agricultural and business groups; and other interested for-profit and non-profit entities.

The Department anticipates releasing a *Request for Expertise* highlighting key Program needs and requirements for contending consortiums to submit a response to the Department around the second quarter of 2026. Each consortium will provide only one submission by the lead researcher on behalf of all other consortium members and researchers. The Department was appropriated and anticipates making an initial multi-million dollar award to one lead university on behalf of its consortium members to establish the Center and to develop and deploy the Model. Pursuant to Section 975, additional funds may become available as appropriated by the Legislature for updates, maintenance, and additional functionality to improve the usability of the Model.

While the criteria and requirements to apply for the grants will be published in the official notices to be released in 2026, the following are foreseen as necessary to successfully complete the objectives set forth by the Legislation:

- Applications must be submitted by an eligible lead researcher from the lead university (accredited, degree-granting institution of higher education) on behalf of all consortium members. The lead university will be solely responsible for all aspects of project management and compliance by its consortium members.
- The consortium must demonstrate the capacity, infrastructure, and collaborative framework to undertake complex interdisciplinary research and outreach activities to develop, validate, and deploy the Model, including:
    - ❖ Researchers with demonstrated expertise in fire science and fire protection engineering; climate and meteorological science; actuarial science; data and computational science; and any other required discipline, or ability to hire or otherwise outsource specific subcomponents or subprojects that are outside of the required core expertise as expressly described in their responses.
    - ❖ Modelers with experience in climate and wildfire modeling and spatial analytics.
    - ❖ Ability to engage with tribal nations, disadvantaged and vulnerable communities, and fire experts from federal, state, tribal, or local fire management agencies, NGOs, or other community-based organizations.

As part of this process, the Department will be setting up a website to contain relevant information, notices, and FAQs for interested parties. The Program will be managed by the Climate and Sustainability Branch, and we encourage parties interested in applying for grants to begin preparing in advance and to participate in an introductory informational webinar anticipated for the first week of December to explain the technical aspects of catastrophe models and preliminary information regarding the grant process.

Click Here to Register for the Informational Webinar

For additional information and considerations, including, without limitation, providing an educational benefit for California students and the leveraging of separate resources and funding, see the final text of SB 429.

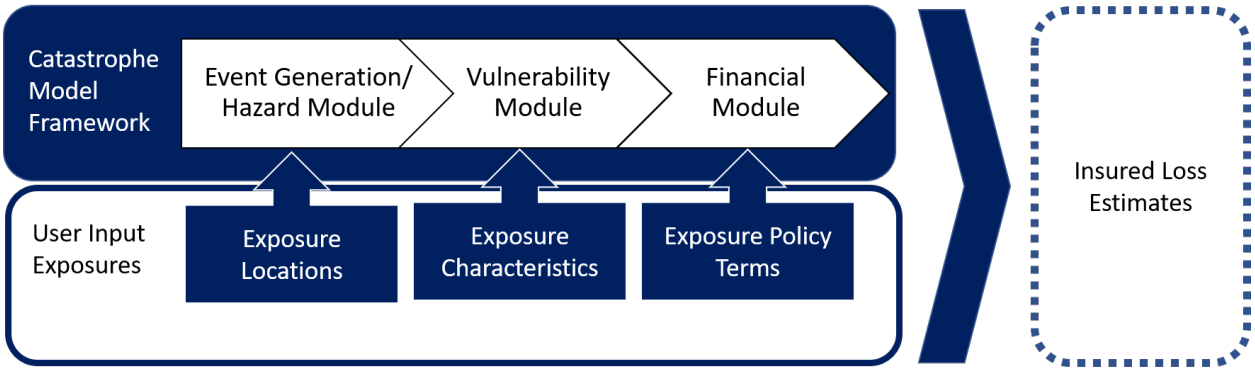
APPENDIX A

A **catastrophe model** is a computer-based process that simulates thousands of plausible catastrophic events based upon statistical, financial, economic, physical, engineering, other scientific concepts and equations, and insurance policy coverage information to derive aggregate estimates of financial loss, including insured loss.

Framework

The basic wildfire catastrophe model framework can conceptually be divided into the exposures, which are input to the model by a user, and three additional modules:

- **Exposures:** The user provides property ("exposure") locations, values, characteristics (*e.g.,* building materials, mitigation features), and insurance policy terms in a specified format.
- **Event Generation/Hazard Module:** Statistical and quasi-physical modeling approaches are used to generate millions of simulated wildfire footprints distributed across many thousands of versions of a wildfire year. The probability of any wildfire or year of wildfires is estimated and is calibrated. This module determines what intensity of wildfire an "exposure" (*i.e.,* structure) experiences and how often it experiences wildfire based on its location.
- **Vulnerability Module:** Statistics and engineering principles are applied to estimate how much damage occurs if a structure and contents within it experience a given intensity of fire and how long the property is unusable. It accounts for the characteristics of the structure including occupancy, construction, mitigation features, defensible space and other features. This module determines how much damage occurs each time an "exposure" experiences fire.
- **Financial (Loss) Module:** Actuarial and statistical principles are applied to account for insurance policy terms and aggregate losses. This module determines the final estimate of insured loss.



Use Cases

Catastrophe models can be used for, among other purposes:

- Estimating expected losses for developing insurance rates, reserves, and risk management
- Estimating the value of mitigation or resilient building in reducing future losses
- Evaluating the impact of plausible major catastrophes that may occur in the future ("Stress testing") for business planning, emergency planning, resource allocation, climate adaptation planning etc.
- Structuring finance and funding mechanisms (*e.g.,* catastrophe bonds)