

CALIFORNIA CLIMATE INSURANCE WORKING GROUP

DRAFT Minutes for April 14, 2023

To be considered at the next Working Group meeting

Participants:

Chair Alice Hill, Council on Foreign Relations

Vice Chair Carolyn Kousky, Environmental Defense Fund

Mike Peterson, California Department of Insurance

Nicole Wong, Greenlining

Sydney Chamberlin, The Nature Conservancy

Katelyn Roedner Sutter, Environmental Defense Fund

Mike Lynes, Audubon Society

Raghuveer Vinukollu, Munich Re

Rex Frazier, Personal Insurance Federation of California

Lloyd Dixon, Rand Corporation

Louis Blumberg, Blumberg West Consulting

Minutes:

Deputy Commissioner Peterson welcomed the Climate Insurance Working Group members and members of the public to the meeting. Peterson provided directions on public comment and for finding the materials for the meeting. The agenda has three items, including a presentation from the California Department of Insurance on the progress report for implementing the Climate Insurance Report Recommendations. The second is a presentation by Milliman on a recent research paper focused on wildfire risks in California and insurance, and a discussion by group members. The third is a presentation by Kurt Schickman and Larry Kalkstein from the Arsht Rockefeller Resilience Center. Peterson then turned the meeting over to Chair Alice Hill.

Chair Hill welcomed the members. She noted that California has seen very dramatic weather in recent months the atmospheric rivers have brought acute flooding to communities across the State, and there is now substantial snow pack in the Sierra Nevada Mountains. The amount of rainfall the State has experienced, and snowfall the precipitation highlights. One of the points about flood risk that members of this working group made a few years ago, which is that although California has had very well

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publicized Wildfires, it is lesser known that California is at significant risk of flooding, and that there is very low flood insurance coverage throughout the State.

Chair Hill noted that specifically, our report noted that less than 5% of households in California have flood insurance, meaning that nearly all the cost of recent storms are falling on individuals, households, and local governments, which contributes to unequal recoveries in flooded areas.

Chair Hill introduced the first agenda item and passed the floor back to Deputy Commissioner Peterson.

For Agenda Item 1, Peterson reported that the Department continues to work on implementation of recommendations in the Climate Insurance Report and had 3 specific updates. One is that the heat ranking system that was put into California State statute, when Assembly Bill 2238 passed by the State Legislature in September 2022, and signed by the Governor is now in the early stages of implementation. As you look through the California State budget, you may see parts where different agencies or departments are apportioning staff and making budget requests in order to help implement that bill. There will be multiple steps to this process and future updates will provide more details.

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Peterson presented a second update, this one on the extreme heat recommendation to conduct a study of costs, both insured and uninsured, costs to local governments, individuals, and households as a result of heat waves. The Department publicly published a Request for Proposals about one month ago, and the window for proposals has now closed, with submitted proposals under review. There will be additional points in time for the working group to provide input. This study is part of a wider effort at CDI to better understand the impacts from heat events. Supplemental information that the department can collect from local governments or certain sectors of the economy may be very valuable as well.

Peterson's third update was that the Department, in partnership with UC Santa Cruz, and the Army Corps of Engineers, and the Ocean Science Trust, held a symposium in March to convene experts on coastal flooding and atmospheric river impacts that symposium and convening produced a number of ideas that will be formalized into reports in the in the future. No deliverables to report today, but definitely progress and the beginnings of pilot projects that will be developed with time.

Peterson asked for member questions. There were none.

Peterson asked for public comment. There was none.

Chair Hill thanked Deputy Peterson for his updates and turned to Agenda item 2. Chair Hill introduced the presenter from Milliman, Nancy Watkins. She will be speaking about a recent study that her firm completed and published on catastrophe modeling and wildfire risks.

Chair Hill noted that as the Working Group members put together the climate insurance report, mapping and modeling were topics that we discussed a lot as to how they could help with risk assessment and ultimately lead to risk reduction. And a number of our members have expertise in this issue, and the report was really, in my view, significant in calling out the need to understand and improve our mapping, modeling, and mitigation.

Chair Hill welcomed Nancy Watkins and thanked her for being willing to share the research report with the group.

Nancy Watkins, Milliman actuaries, present the research paper included in the meeting materials. She noted that she does a lot of research and volunteer educational work for regulators and communities on issues of property insurance availability and affordability. She is currently working with the Western Fire Chiefs Association and with CAL FIRE on a working group.

Ms. Watkins noted that currently, California requires insurers through homeowners rate filings to replace all historical catastrophe, losses with a long term average, and in practice this uses the last 20 years of insured losses from catastrophe events. She compared the use of historical losses to the use of modeled losses from catastrophe models, and described the use of catastrophe models in other states, and in different lines of insurance, like the peril of earthquakes.

Chair Hill thanked Nancy Watkins for her presentation and asked the group if they had any questions.

Member Sydney Chamberlin was recognized to ask questions. Dr. Chamberlin asked: You know, the question I have is thinking about California is kind of an outlier here in us not using cat models. What can we learn from other states in terms of the concerns that you flag around this in California? This includes the possibility of rates going up, and whether concerns maybe tie into equity issues. Are there examples of other states doing things to help mitigate some of these concerns around the using catastrophe models looking forward?

Ms. Watkins responded, thanking Dr. Chamberlin for the question, and states that Florida is a very instructive place. They have been through a lot of the same kinds of

issues that California has been through. For Florida it was the 1990s after Hurricane Andrews. They had a similar kind of situation here that hurricane really shook the insurance industry. You asked me about lessons learned from other States, transparency and equity, which are kind of 3 different things. I'm going to start with the first lessons learned. Florida is a very instructive place. They created a public model that didn't really help the situation over time. They also implemented a bunch of mitigation credits that were not founded in science, which contributed to a lot of consumer confusion and insurer insolvency. There are some lessons learned on the positive side and on the negative side. But what did end up working was recognizing the true cost of risk through both the catastrophe modeled provisioning the rates, and the cost of reinsurance. They use cap model for both of those things, and they set up a facility that was crossed disciplinary, that kick the tires of the models and that facility dealt with the transparency issue that was the second part of your question. It's called the Florida Commission on Hurricane Loss projection methodology, and they do a very in depth view of the catastrophe models. The Commission includes hurricane scientists, academics, insurance experts, actuaries, engineers. The Commission has the kinds of people that understand all the different pieces of the model working together, and they go in, and they look at confidential model or IP, and that part means the experts who are working for the State are really understanding the model, but the modelers intellectual property is protected from their competitors, which I think is the best of all possible worlds, because you don't want to dis-incentivize investment in something as important as understanding catastrophic risk.

Nancy Watkins continued. The downside of the Florida Commission is they only really care about Florida, and they are evaluating their hurricane models, not models for other perils. In answer to the transparency question, Ms. Watkins noted that a Catastrophe modeling clearinghouse could act as a shared resource among regulators. They could standardize reports that can be published and used by consumers, regulators that that really show side by side comparisons of what the models do and what they don't do and what the answers are, and I think that should not be confidential because that is the sort of thing people really want to know. They do not need to see all the code, they really need to see high level understanding and understandable information.

Nancy Watkins continued her answers to address the third question, focusing on equity. In terms of equity. Actuarial equity means charging the price for the risk and charging like risks the right. For example, if my risk is like Carolyn's risk, we should get the same rates. If my risk is very different than Carolyn's risk, we should get different rates. That's what equity means for actuaries. In a social construct of equity, we are talking about helping people afford an insurance that they can't afford. Is that more what you're getting at, and that gets to subsidization, which insurance companies are not really in a position to charge more for people who can afford things. But the Government can do that. The Government can subsidize and look out for the people that are the most vulnerable, and make sure that they have access to coverage that they can afford.

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Vice Chair Kousky asked the next question. She thought the idea of a nationwide model clearinghouse could be a really good idea. Kousky asked whether there were good examples of the review of models, noting that reviewing a model as fit for use vs. reviewing how a model is being used by a user, are two different questions.

Nancy Watkins noted that there is a massive training gap for model evaluation. There is no universal standard on whether Catastrophe model is suited for the purpose, I mean, if in the hands of an expert, most models can be useful for something in the hands of someone who doesn't know what they're doing. The best model in the world can be used horribly wrong.

Vice Chair Kousky asked a second question, stating that she thought at least for earthquake insurance that insurance companies are not constrained by a process that looks backward. For earthquakes, Kousky stated that you can actually have a model that looks at proximity to faults. How does the department deal with the same transparency concerns that should exist for these other type of similar models.

Nancy Watkins responded that as far as she knew they operate in California pretty similar to other states, which is that they ask basic questions of the modelers and get actuarial certifications of the model.

Member Lloyd Dixon commented that he really liked the affordability point about if you had appropriate rates before, you wouldn't have those surprises after someone has bought a house that then creates an unanticipated affordability issue, because the rates could surge the homeowner may not have known that information when they bought the house. If they had known, presumably the insurance costs would have been capitalized into the value of the house in some way, so there wouldn't be this kind of a surprise, and then there would be less demand for affordability programs programs when people see their rates go up. Member Dixon also made the point that if insurance companies were allowed to use model, we would see more growth or less tendency for insurance withdrawal from high risk areas. Member Dixon asked whether there was a way to get some data or do some analysis that would look at the excess and surplus lines markets. They can use models and setting their rates and look at their behavior and see how that's how that differs from those in the admitted market, and wondered if you thought that was something that could give us a better idea of what would be, you know, quantify, or get something more empirical on the effect of moving to models and I wondered if a way to sort of get some data on that, or some do some analysis on that would be to look at the excess and surplus lines market where I assume they can. They can use models and setting their rates and look at their behavior and see how that's how that differs from those in the admitted market, and wondered if you thought that was something that could give us a better idea of what would be, you know, quantify, or get something more empirical on the effect of moving to models.

Nancy Watkins responded that she saw some testimony from the surplus lines of California group, and they said that few are like. There was an an an increase in

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surplus lines activity in California over the past few years, and it's actually been declining in number of policies. Catastrophe models are essential but not sufficient to fully address the wildfire problems. The problem is solved by finding the risk and driving it down. And that includes better data and better modeling of mitigation. It is a good place to start with recognizing what the model is seeing, what the insurance company is seeing and what the reinsurers are seeing.

Mike Peterson asked the next question. He thanked the presenter and said that he really appreciated the thoroughness of the presentation today. Deputy Peterson noted that the Department of Insurance is focused on consumer protection, and specifically on how any policy change would benefit consumers. Other government agencies that have financial regulatory roles, such as the oversight of the bond market, likely face similar challenges from new technologies and how to apply them. Peterson asked: given that many of these models are new or at least relatively new, what do we do with these new technologies? What approaches does a Government regulator consider to look at guarding against the use of models to produce an exaggerated rate rather than just a more accurate rate?

Nancy Watkins responded: That's a great question. And I think a model is just a description. The map is a simplification of a really complicated situation where the fire gets started. It spreads into a community fire. Professionals put the fire out, some houses, burn some houses don't burn. So you should expect multiple models to have very different views of what one house's risk is.

Lloyd Dixon noted that he saw an additional point that there is some competitive pressure between and among insurance companies to accurately use a model. You know that insurers who are inappropriately using models would be priced out of the market. Has anybody ever encountered in their professional experience a situation where an insurance company inappropriately used a model?

Nancy Watkins responded that in her experience with rate filings it feels like we've safeguarded a whole lot against something that there's not really any incentive to do it.

Mike Peterson responded that the root of his question wasn't that there would be falsification. But if someone is looking at 4 different models, what prevents that person from picking the one that gives them the highest rate or the most favorable outputs.

Nancy Watkins responded that which model look at is a decision making process. You look for consistency within the insurance market, like an insurance company going out to market and buying reinsurance to a certain probable maximal loss. That's how the company is going to manage their risk. I think most companies would want to be using the same models for rate making as they're using to manage and measure their risk.

Chair Hill thank the presenter for their presentation and answer the working group's questions. Deputy Peterson asked for public comment. There was none.

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Chair Hill introduced the next presenters, Larry Kalkstein and Kurt Schickman from ArstRock, noting that this organization specific strategies and research to better understand the risks posed by extreme heat. They have driven the process of getting heat resilience. Officers in Miami and other cities across the globe.

Deputy Peterson added that the work on extreme heat is growing and that AshtRock and the Climate Insurance Working Group are like two rivers coming into confluence. Back in the summer of 2019, the working group was discussing extreme heat solutions and one of the members, Kristen Pawling, put out the question: why can't we rank heat waves. The working group flushed out that idea over the next two years. At the same time, the Extreme Heat Resilience Alliance was working on how to name and rank heat waves. Therefore, this is really a good opportunity for our working group and for the public to hear about the important work that Kurt and Larry are working on with many other colleagues.

Kurt Shickman started by noting that they have been specifically highlighting a system to connect local weather conditions to local health outcomes, and that allows us to categorize daily weather, not just by the temperature or by weather conditions, but actually by it's danger to people. Arsht Rock is now supporting pilot systems in a number of locations, including Seville, Spain. They are also testing a whether naming of heat waves, or periods of our most dangerous heat events can drive noticeable changes in in preparatory behavior and currently working to take their pilot in Athens, Greece, to a national scale throughout the country, and launching year 2 in Seville. In in addition to those more sort of formalized pilots, they also have done a number of offline demonstrations of the system in US. Cities, and including Los Angeles. Dr. Larry Kalkstein, is the chief Heat scientist, and together with experts from Boston University, University of Seville, and the National Observatory of Athens and others, we've developed and refined this approach, and we're in the process of evaluating our year one performance and we'll be publishing a series of papers for public review.

Larry Kalkstein explained that his research group has been doing a heat wave warning systems for many years and for many cities around the world. But it took a collaboration with Arsht Rockefeller to really develop a categorization of heat waves, so that we can do a better job of interventions, and know exactly or more exactly how bad things are going to be to human health. He went through the data and science behind the heat ranking approaches that they were piloting, including describing the types of meteorological data, mortality and morbidity data, and additional health data.

Larry Kalkstein described the three level system of heat health warnings. This was based on research on the health outcomes of heat events, including looking at the duration, temperature, humidity, and potential interventions. Each step requires specific research, and locations can vary based on the local topography and physical layout of a community. He concluded the presentation by stating that several research papers would be published in the near future on this topic.

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Deputy Peterson asked if the presenters could describe their engagement with communities in different jurisdictions and how communities reacted to the extreme heat ranking concepts.

Larry Kalkstein responded that in terms of the community support, a growing number of jurisdictions have heat officers, who are trying to understand and respond to the extreme heat risks in their jurisdictions.

Kurt Schickman added that this presentation today was really focused on the technical piece of this. But this is married up with a process of stakeholder engagement and message development that occurs in each individual location, so specifically it's available on app. And since those were the sort of fullest expressions of the pilot we were trying to do. The messaging that goes out when we have a category, 1, 2 or 3 event is different in each place, and, in fact, some cases might be different, depending on the audience that's receiving it and that's developed, not by us, but by our local partners. Sometimes it's within kind in conjunction with the city, but with the city, with local groups that that help us reach the right people with the right messaging.

Nicole Wong from the Greenlining Institute asked a question about how the infiltration or integration is happening with this particular ranking system and how policies have shifted, as well as how behaviors have shifted. She asked if the presenters could talk through how they see policies being rolled out in different communities, especially those that face the greatest vulnerability to heat.

Larry Kalkstein noted that it is important that you have three levels everywhere throughout the country, the State or jurisdiction. If they had a 5 hurricane category in one place and the 3 in another place, it would be very complicated. One of the things we wanted to do is to make sure for the messaging to make sure that even if there are cities that are more vulnerable than others there are still three categories relative for each location.

Larry Kalkstein added that, having the system based on a health outcome rather than meteorology. The impact in my mind is very, very important, and also can assist in messaging, so I can't imagine a system not being based these days. I guess I've been doing this too long on the impacts rather than just on pure meteorology, because there's such variation in impacts in the same kind of meteorological event and we've got to be able to pick out those that are going to be dangerous, and those that are not so. I always want to emphasize that as we talk about this

Deputy Peterson asked a followup question of Larry Kalkstein: in doing this sensitivity analysis for the different cities, did you find that data were generally readily available, or, alternatively, that it was a very arduous task to get the information to. Amazingly. It's been readily available so far, I mean, we've basically they've been in good form. My team always gets the data in good form and in places like Seville, Athens, and a bunch of other cities in Greece.



Larry Kalkstein responded that he and his colleagues have not had problems at all in the US. We already have connections to a full database. We have everyone who has died in the US since 1985 quite honestly. So the database here is very, very rich. I'm sure that if we go to a very poor country, we'll have more difficulty. But thus far everything has been fine.

Chair Hill asked for any additional member questions. There were none.

Peterson asked for public comment. There was none.

Chair Hill provided concluding comments, noting that this was a very informative day, and that we have a lot to look forward to in terms of making sure that our recommendations help us and make sure that Californians remain insured for the coming climate worsened events that we know are ahead and this team has brought us information today has done an excellent job of inspiring us all. Have a good weekend.