

CLIMATE INSURANCE WORKING GROUP MEETING | FEBRUARY 19-20, 2020

DRAFT MINUTES, TO BE CONSIDERED AT THE NEXT WORKING GROUP MEETING

**California Department of Insurance
300 Capitol Mall, 17th Floor
February 19, 2020: 12:15 p.m.
February 20, 2020: 8:45 a.m.**

Participated by Phone:

Alice C. Hill (Chair) | Senior Fellow for Climate Change Policy at the Council on Foreign Relations
Carolyn Kousky (Vice-Chair) | Executive Director, Risk Management and Decision Processes Center, Wharton School of the University of Pennsylvania
Butch Bacani | United Nations, Principles for Sustainable Insurance Initiative
Michelle Passero | Climate Change Program Director, The Nature Conservancy (Day 1)
Katelyn Roedner Sutter | Manager for U.S. Climate, Environmental Defense Fund
Kristen Pawling | Sustainability Program Director, Los Angeles County Chief Sustainability Office

Participated in Person:

Commissioner Ricardo Lara | California Department of Insurance
Kathy Baughman McLeod | Director, Adrienne Arsht-Rockefeller Foundation Resilience Center at the Atlantic Council
Louis Blumberg | Principal of Blumberg West Consulting
Serena Sowers | Vice President, Public Sector Solutions North America, Swiss Re
Michael Lynes | Audubon Society Director of Public Policy
Sona Mohnot | Senior Policy Analyst and Program Manager at the Greenlining Institute
Raghuveer Vinukollu | Natural Catastrophe Solutions Manager, Munich Re
Michelle Passero | Climate Change Program Director, The Nature Conservancy (Day 2)
Sydney Chamberlain | The Nature Conservancy (Day 1)
Katelyn Roedner Sutter | Manager for U.S. Climate, Environmental Defense Fund

I. Welcome and Approval of November 8, 2019 Meeting Minutes

Deputy Commissioner Mike Peterson welcome the group and turned the meeting over to the chair.

Chair Alice Hill shared that she is unfortunately unable to travel. This third meeting of the working group is important. The group has an opportunity to inform California on the array of choices available to improve insurance penetration in areas affected by climate change. Chair Hill would like the group to provide its final recommendations to Commissioner Lara by September. Working in subgroups in the next two days towards that end allows for honing and focusing in on what would make a difference in climate risk.

Member Pawling requested an edit to page five of the November 8, 2019 Meeting

Minutes, which should read that “most vulnerable people are *not* property owners.” No other members requested changes. Member Blumberg moved to adopt the amended Minutes. Member Passero seconded the motion. Member Mohnot abstained from voting as she was unable to attend the last meeting. There was no public comment. The remaining members voted to adopt the minutes. With the Minutes approved, Deputy Commissioner Peterson then turned the discussion over to Vice-Chair Kousky.

Vice-Chair Kousky described a two-year project she was leading on insurance and coastal adaptation. The project began in earnest with an initial workshop in December 2019, focusing on how to improve post-disaster recovery for low-income families, meet community fiscal needs, protect coastal systems, and utilize property and homeowners insurance for risk reduction. Nature-based solutions, insurance affordability for low-income communities, risk management, and innovation were all major themes of the workshop. A workshop summary report will be published in coming weeks which she will share with the group.

II. Update on AXA Insurance Meeting and Announcement from November

Member Bacani reported on recent announcements on climate policies by AXA Insurance at an event with the United Nations last November (2019).

AXA is an interesting company because they made commitments on climate change on coal divestment, green investment, and climate insurance for vulnerable communities in 2015 even before the Paris Agreement was forged. In the November meeting they raised the climate ambition bar for the insurance industry further. They wanted to announce climate commitment but also carried other banks and financial sectors involvements, companies like EDF, Schneider Energy Management, and CEO of a top oil company. Mark Carney of the Bank of England, and the UN Special Envoy on Climate Finance, also attended. The agenda was to engage different actors in the real economy in order to create a low carbon economy.

AXA made a number of announcements as an investor, linking climate goals to their investment strategy and the assessment of their own portfolio. Essentially, they put a thermometer in their portfolio to measure its warming potential and see how it aligned with the Paris Agreement. They are not currently aligned with the Paris agreement; it is a work in progress. AXA has worked to transition to a low carbon economy by working with green bonds in the European Union that go to green projects, but green projects are very limited. AXA is promoting the rest of the economy transitioning to green bonds. For example, co-generation plant, transportation, aircraft alternative fuels, use recycled raw materials. AXA issued the first transition bond to a French bank. Additionally, their policy is to be coal-free in OECD and EU countries by 2030 and in the rest of the world by 2040.

As an insurer, AXA wants to leverage climate expertise and provide innovative technology and services for their customers. They soft launched a new parametric product that offers real-time services using satellite and drone imagery to support communities with natural disasters like flood, earthquake, wildfire, and cyclones. These

are innovative products that help protect communities from climate and earthquake risks. That protection can be critical for community resilience. AXA is demonstrating climate leadership and ambition and working to harness their full value as an insurer and investor.

Member Bacani advised that some of the largest insurers and reinsurers in the world recently convened at the World Economic Forum. The agenda is on currency in the context of sustainable development tools, including zero poverty, zero hunger, resilient infrastructure, among others. Attendees discussed whether it is possible to map insurance products and solutions in the context of the UN sustainable development goals, understand which are the products that are giving support to climate action for zero hunger and poverty—whether it is agriculture insurance, property insurance, environmental pollution liability insurance—what are the sort of products that are missing that can support other goals like life on water or life on land or natural eco systems. The result of the meeting is a new initiative to pursue the creation of insurance-based sustainable development tools that harness and support the UN’s sustainable development goals.

The CEO of Swiss Re is convening a meeting on May 4th to discuss this initiative to have a global sustainability agenda on insurance products and solutions that is collaborative and creative. California can provide some of the innovation and drive to promote sustainability and insurance solutions for emissions mitigation and climate resilience.

Chair Hill thanked Member Bacani for the interesting and exciting report and turned the discussion over to Deputy Commissioner Peterson.

III. Discussion: Adding further insurance expertise to the working group

Deputy Commissioner Peterson briefly reviewed reports and materials of interest to the group’s work, including a December 2019 [report that Zurich published](#) on wildfires and building resilience, the Draft Climate Insurance Working Group Meeting Notes from November 8, 2019, and information from the proposed state budget of California, related to a potential California resilience bond to be discussed later in the day.

Deputy Commissioner Peterson then reviewed responses to various requests that the Climate Insurance Working Group previously made of the California Department of Insurance. First, regarding learning more about tribal governance and tribal insurance. Deputy Commissioner Peterson has held several meetings on tribes in North America, including mainly California tribes, but also some broader discussion, in response to this request. Carolyn’s Coastal Resilience Event with Wharton Business School connected him to someone who is a researcher on insurance and tribes so Deputy Commissioner Peterson will continue this inquiry, and will report back at a later point when there is further progress to report.

Regarding how building codes and wildfires interplay in the California context, the

Zurich report provided is an interesting nexus because the initiative for the report is an insurer partnering with a research institution to come up with information and recommendations. Building codes and community design are highlighted in the report and have some overlap with initial discussions of the Wildfire Subgroup. In addition, regarding how the working group can share documents, this is a work in progress. The Department has mechanisms available, but they are problematic so while he works on that, a bibliography will be maintained on the Department's website. Finally, in response to the working group's prior request for an increased insurance expertise, the group may consider the addition of two different members today, Rex Frazier and Lloyd Dixon. Mr. Frazier has been working on insurance policy in California for many years.

Mr. Dixon is the Director of a research program at RAND focusing on disasters, insurance, and policy. Deputy Commissioner Peterson reviewed that the working group's rules, established at the first meeting, state that a two-thirds consensus is needed to induct any new members into the working group. Members are free to leave the working group when they wish.

Deputy Commissioner Peterson asked Mr. Frazier to introduce himself to the group and give any initial thoughts he had about his contributions to the group.

Rex Frazier is President of the Personal Insurance Federation of California (PIFC), a trade association for large property and casualty insurers with a focus on personal insurance lines. Early in his career, as a law professor, he developed a legislative advocacy clinic for students. He worked in the California Assembly and then for the California Department of Insurance as a Deputy Commissioner with a focus on the early regulatory implementation of Prop 103. For a time, he acted as counsel for a Los Angeles-based law firm but moved later returned to Sacramento to be General Counsel and lobbyist lawyer for PIFC. In 2008, in response to the emergence of auto issues, Mr. Frazier partnered with then California Assemblymember. Jarred Huffman to identify what behavioral changes the insurance industry could be part of for auto insurance, specifically, linked miles driven with insurance premium paid. Generally, if left to their own devices, people often do not accurately self-report mileage. It was challenging to convince the California Department of Insurance (CDI) to change existing rules but, ultimately, regulations were developed that are now known as Pay as You Drive (PAYD). That was over ten years ago and at that point there was still not technology in place to properly report actual miles driver.

On the topic of property insurance, Mr. Frazier has been interested in pre-loss mitigation, resiliency and adaptation issues and was active in the 2008 building code process with the state fire marshal that developed the Chapter 7A building codes. Ultimately, it gave Californians a building code that is generally viewed as a national model. Every policy choice has a consequence. In this case, it was increased construction costs Mr. Frazier recognizes this type of mitigation work is not always initially successfully when it comes to difficult issues, but that over time solutions can be developed, and this remains an area of interest for him.

In addition, Mr. Frazier is interested in the use of complex catastrophic modeling as it may allow pricing to risk in a way that allows an expanded use of science. There will be equity issues to work through there. He hopes that he can be of use to the group as he has a deep background in insurance regulatory law.

Member Baughman McLeod asked if Mr. Frazier has observed an acceleration in the industry's acceptance of climate risk and resilience efforts. Has he seen the tenor of the conversation change?

Mr. Frazier responded affirmatively. Commissioner Jones' emphasis on investment portfolio issues prompted greater response from domestic insurers, the California-only companies. As they are more invested in their relationship with their regulator, they're going to be much more likely to dive in. The larger global companies are still finding their way there and move at their own time frame. In the past six months, for example, Progressive, a household name that has only sold auto, purchased ASI, a Florida-based company that has figured out how to write in Florida's difficult wind market, and are now ready to come to California. They need a rate level that is not common in California. Rate levels have been lagging here versus the rest of the country and just because California hasn't had the climate adjustment that Florida has faced, the research caused by devastating hurricanes hasn't happened here yet for wildfire. For companies to feel like they can experiment here, they need a rate level cushion. Progressive has a rate level in for plus nineteen percent, but they've included, for the first time, a parcel-level and community-level mitigation discount that will be part of that program. It's exciting, but there is a tradeoff. It's going to cost more to experiment. If they feel capital starved, it's harder to do it.

Deputy Commissioner Peterson asked Mr. Dixon to introduce himself and give any initial thoughts he had about his contributions to the group.

Mr. Dixon is a Senior Economist at the RAND Corporation with a focus on research projects related to risk management. He is also the director of the RAND Center for Catastrophic and Risk Management. Mr. Dixon looks at the risk management practices of individual businesses and public entities. He examines the performance of insurance markets with natural and human disasters, considering things like the cost and availability of coverage, insurance take-up rate, the amount of coverage people purchase and the affordability issue. Mr. Dixon has extensive experience with flood insurance and markets, with terrorism insurance, and, more recently, with fire and wildfire coverage in California. He is particularly interested in how insurance markets can provide appropriate incentives for land use and mitigation, recognizing affordability challenges that risk-based premiums can create. In the context of the National Flood Insurance Program, he has been helping FEMA to think about a flood insurance affordability program with risk-based rates. Mr. Dixon finds it important to think about how risk is spread at the federal, state, and local levels. He believes there are serious shortcomings to how our current system is structured. He looks forward to contributing to the working group and helping California think about how it can use risk transfer mechanisms to address climate risk.

Chair Hill thanked Mr. Frazier and Mr. Dixon for joining the meeting and asked if there was any objection to Mr. Frazier joining the working group. There was none. Chair Hill asked if there was any objection or public comment to Mr. Frazier joining the working group. There was none. Chair Hill asked if there was any objection or public comment to Mr. Dixon joining the working group. There was none. Chair Hill welcomed Member Frazier and Member Rand to the working group.

IV. Reports from each subgroup

Chair Hill turned the discussion to Member Baughman McLeod to lead the work group through updates from each subgroup. Chair Hill reminded the group that this is the period of great creativity and productivity. The summer months will be spend refining the report to provide a recommendation to the Commissioner in September.

Member Baughman McLeod reviewed the issues that each subgroup should be considering:

- What are the socioeconomic factors?
- Are there nature-based solutions to help solve it?
- Are there opportunities for insurance incentives to reduce greenhouse gases or short-lived climate pollutant emissions?
- Can we do mitigation and adaptation?
- What are the community-level solutions? Could you do a community insurance policy?
- Are there approaches from native tribes that serve as strong models?
- How to facilitate mobility when consumers want to relocate?
- How to proactively design communities to be resilient?

Member Baughman McLeod turned the conversation to Member Passero to review the progress of the Wildfire Subgroup.

Member Passero advised that the Wildfire Subgroup has developed three areas to explore: 1) how to mitigate fire risk, 2) how to avoid future development in high-risk areas, and 3) when adaptive relocation should be a consideration. The subgroup's immediate focus will be how to best mitigate risk with an emphasis on reducing the insurance gap to maintain high wildfire insurance penetration.

Deputy Commissioner Peterson circulated a [Report Concept Document](#) to guide subgroup updates to the overall group and help focus the broader discussion. Peterson asked for examples of what the Wildfire Subgroup has discussed most substantively. Member Passero shared that they have discussed the idea of community-based insurance and the possibility of a public-private risk pool with adaptive relocation as an option. The subgroup also discussed providing guidance to Firewise communities or similar community mitigation strategies. Additionally, they've discussed a community-based insurance instrument where homeowners in high-risk areas can come together to

buy their own insurance; however, this is still in the brainstorming phase.

Chair Hill asked the subgroup to keep in mind land use issues as they move forward in their discussions. Despite the strength of California's building codes, we know that areas that have burned in all likelihood will burn again. The land use issue is difficult, but it is important to not shy away. We don't want to make a false promise where the communities are insurable when they are built in extreme risk areas that will only worsen with climate change.

Member Sowers raised that if only people who are exposed to wildfire are in a risk pool, then it is not a risk pool.

Member Frazier asked if the mechanism they referenced would be something outside of the FAIR Plan, as the FAIR Plan already represents a right to fire insurance, is adversely selected as it is a statewide pool now—what is the value in creating a smaller public-private risk pool than what we have now where the FAIR Plan is, in essence, a residual market funding mechanism that, if it does run out of money, has to be funded by a statewide homeowners base?

Member Blumberg added that their discussion raised points about maintaining market penetration for homeowners wildfire insurance coverage; what steps can be taken to mitigate nonrenewals.

Deputy Commissioner Peterson added that the subgroup had found the Zurich Report and there was some overlap between that report and the subgroups discussion on how building codes and community design strategies could be further applied across California. Peterson also reviewed that there are common questions each group must answers, including whether a community approach is feasible or appropriate, whether or how a nature-based solution would be appropriate, and so on. This list of questions should probably be formalized and re-circulated.

Member Baughman McLeod reviewed that, at this point, the subgroups are all brainstorming still and will continue to consider the practical application of ideas as they solidify.

Deputy Commissioner Peterson then turned the conversation over to Vice-Chair Carolyn Kousky to review the progress of the Flood Sea Level Rise Subgroup.

Vice-Chair Kousky shared that they are considering three different areas: Risk communication, Insurance solutions, and nature-based solutions. Risk communication around flooding is insufficient and inadequate, as is the willingness to insure and invest in mitigation. The subgroup's policy recommendations include a state-maintained risk database, including flood risk information on MLS listings, an online tool to view flood risk rating, and online calculator to get your premium, risk info and communication, and vulnerability.

It is estimated that an extremely low percentage of California's homeowners population has flood insurance, including those in low risk areas. To address the large flood insurance gap, the subgroup recommends piloting new insurance solutions, considering where the insurance gap is most problematic, examining public policy decisions for vulnerable subpopulations, and explore community insurance.

The subgroup's recommendations for nature-based solutions include using wetlands to mitigate flooding and improved mapping to target conservation. This area of their recommendations is still evolving.

Member Baughman McLeod thanked the Flood and Sea Level Rise subgroup for their update and turned the discussion to Member Blumberg to review the work of the High Heat Subgroup.

Member Blumberg advised that the High Heat subgroup focused on developing a problem statement, and had discussed risk communication and risk transfer ideas related to that problem statement.

Extreme heat is a serious global problem that affects California, particularly California's vulnerable communities, causes death and illness, and will only increase in frequency and severity of extreme heat events, as evidenced in the data presented in California's Fourth Climate Change Assessment. Essentially people fall back on their medical insurance, whether public or private. Costs are born by different entities, including local governments. Through the increased use of emergency response public hospitals treat many different vulnerable communities. Awareness of extreme heat as an issue in the context of climate change is increasing. Cities and counties are adopting plans. The Governor's budget includes a line specifically for tree canopy and climate research funding for extreme heat. There is a need for education on this topic. Opportunity exists for risk transfer mechanisms using a parametric approach.

Member Baughman McLeod shared that they began by looking at the threshold of what happens to the human body during a heatwave. There is not enough information available, research is needed. What does risk literacy look like and what do people need to make those decisions? An information campaign must be built to support policy decisions. Data collection, and associated costs, of heat induced sickness is often categorized as something else like heart failure.

Member Sowers shared that subgroup scoped their focus to urban heat and vulnerable populations. In urban areas, there are many different groups that fall through the cracks. The subgroup considered different points for potential intervention: cardiovascular issues, kidney disease, etc. The Kidney Belt zone in the South where kidney failure is more prevalent than other regions is thought to be connected to extreme heat.

Deputy Commissioner Peterson stated that the Senate Office of Research put together a report last year, in late 2018, that included a compilation of many health impacts from climate change, of which, the kidney risk zone was especially compelling. In addition,

Peterson encouraged the extreme heat group to think about the emissions mitigation considerations around this issue. Cooling centers that rely on HFCs are likely counterproductive. HFCs are a strong climate pollutant, one of the super pollutants that have many times, in some cases thousands of times more potency than carbon dioxide as a climate forcer. Alternatives exist for many applications, and this is one of those cases where a recommendation could address adaptation, but have a narrow, targeted criteria on HFC emissions mitigation if the recommendation was crafted wisely.

Member Blumberg continued to provide the update. The Extreme Heat subgroup identified four intervening factors: Community level, hospitals, utilities, health systems. Community centers can provide water and quick screening. Hospitals can be subsidized to absorb intake of vulnerable and underinsured. Utilities could subsidize the cost of utilities so vulnerable populations can use air conditioning. Health systems could provide insurance solutions for risk reduction for people to go to hospital earlier in the process. The parametric trigger could be the third day of heat exceeding 90 degrees. The idea is to provide help to vulnerable populations before problems escalate. Get in front of the heat wave and be proactive.

Member Baughman McLeod referenced the Kenya Livestock Insurance Program (KLIP) as an example. This scenario is working to help people, not cattle, but it's the same concept.

Member Sowers spoke with NASA regarding the data they collect. The state of New York examined public health data and noted that the uptick of hospital intake aligned with heat days. 100 degrees is not when extreme heat impacts and issues kick in, it is closer to 95 degrees. It is imperative to identify where the real need is and address it at that point. Waiting to take action when the temperature rises above 100 degrees is not the strategy we should be relying on.

Member Blumberg discussed how many cities and counties are adopting heat action plans and posed whether there is a way to insure the implementation of the plan. If a city or county committed to implementing a heat action plan in a select neighborhood with a vulnerable population, a methodology for monitoring the effectiveness of implementation would be necessary. Nature-based solutions may be an effective mitigation tool in a heat action plan.

Commissioner Lara shared that he recently met with state insurance regulators at a National Association of Insurance Commissioners meeting and was pleased to see that regulators appear ready to prioritize climate risk issues and take proactive measures. Climate has been elevated as a top priority for this coming year. The upcoming National Association of Insurance Commissioners Spring National Meeting in Phoenix is an opportunity to look at extreme heat in an insurance context and move beyond talking about flooding and wildfire. Questions about heat align with the location of the meeting being in Phoenix. How can parametric models like what was done in Quintana Roo be utilized in the context of agriculture and property casualty insurance? What are the thresholds of risk, mitigation possibilities, and opportunities for insurance protection?

How can the National Association of Insurance Commissioners begin to better understand the risks of extreme heat and the opportunities for insurance solutions?

The members of the working group then broke out into subgroups, with a plan to reconvene in approximately 90 minutes. .

V. Break for subgroups to work on proposals, approximately 90 minutes

VI. Reconvene from Break

VII. California Report from OECD (Organization for Economic Cooperation and Development)

Deputy Commissioner Peterson advised that Commissioner Lara was invited to speak to OECD, providing an update on wildfires and insurance in California, and also communicating our approach to climate risks, mitigation, and adaptation. Researchers and policy-makers with a focus on climate adaptation and insurance were part of the discussion, and the OECD audience was extremely interested in the potential approaches to wildfire and extreme heat through insurance mechanisms. Commissioner Lara will go to these types of meetings when he is invited and able to attend. Meetings like this provide an opportunity to effectively reach international audiences and present access to significant resources. Followup meetings with OECD members could provide important knowledge exchanges.

VIII. California Resilience Bond update

Deputy Commissioner Peterson advised that one came out of the California legislature and one came out of the governor's budget. Both focus on how to make California more resilient and are substantial amounts of money, both currently between \$4-\$5.5 Billion. Additional proposals were introduced in 2019 and may or may not continue to move forward. The working group needs to identify the applicability of its work to such a large resilience investment and decide if the working group wants to write comments now or in the future. When the Governor's bond came out in end of January it mirrored the working group thematically, with sections on Flood, Sea Level Rise, Wildfire, and Extreme Heat, Community Resilience, and incorporated Drought within the section emphasizing water resilience. The working group's recommendations should consider how they might be complement or be integrated with the Resilience Bond efforts. In addition, it is important to note that this is California's proposed version of a bond. We have come across and may continue in the future to discuss the concept of a resiliency bond in a slightly different light, emphasizing the links between mitigation, risk transfer, and avoidance of future losses.

Member Lynes advised that SB-45 (Allen) is a two-year bill and was amended to get up to \$5.5 billion dollars. The Governor anticipated bond spending in the draft budget he introduced in January as line items indicate a reliance on the negotiated passage and completion of a bond. This is similar to what occurred with Proposition 68, a park bond.

In addition, AB-352 by Assemblymember Eduardo Garcia is an Assembly bill with broad categories that will likely align with the SB-45 categories of wildfire prevention, community resilience, and water preservation. Member Lynes notes that this bond, as proposed, would be closer to \$8 to 10 billion. Further, Member Lynes noted the advantages and disadvantages of a bond approach for California. There are concerns that bonds are expensive and limited in scope as there are restrictions in how the money must be used. Bonds may be a wise approach for infrastructure but not so much for programs, which are ongoing. Bonds can be volatile and present policy concerns. If programs rely on bonds for funding then, when there is a year that the bond is not passed, those programs will have no funding. Even so, the cost of these bond proposals demonstrates the size and scope of the resilience problem and the legislature and Governor's thinking on how to address it. Proposition 68, which created an approximately \$4 Billion bond for investments in parks and water resilience, was passed by the Legislature in 2017, signed by the Governor, and then passed a popular vote in the state.

Member Baughman McLeod shared that the working group is looking at these proposals to give the working group a sense of what the state might have at its disposal to spend around climate risk solution.

Deputy Commissioner Peterson advised that the working group's goal is to identify risk transfer market mechanisms to reduce the risks and impacts of climate change. This is how the state is operating right now so the working group should think about potential pilots and tools the working group could propose that would complement or fit into the bond apparatus and goals. Think about the potential for risk transfer to enhance resiliency.

Member Lynes stated that SB 45 and Prop 68 has 10-15% allocated to go to assistance and outreach, risk communication and education. The group could be thinking about does the bond have adequate language, particularly regarding risk communication. The working group can look at the language to see if it reflects what the working group would like to see.

Member Lynes thinks the working group should really focus on assistance to vulnerable and disadvantaged communities, where resilience efforts are most needed.

Deputy Commissioner Peterson stated that, with a consensus, the working group could write a letter. Or Commissioner Lara could write his own letter. Or the working group could recommend to Commissioner Lara that he write a letter and the Commissioner could then decide how to proceed. In general, the group can make recommendations on a range of policy options, and one of those recommendations could certainly be what to advocate for in existing legislation or budgetary language.

Member Lynes stated that if the working group wanted to do that they'd have to propose and agree on a framework. Member Lynes also pointed members to the Legislative

Analysts Office (LAO) reports as a window into the considerations being discussed in the Legislature. In particular, [a recent LAO report](#) on coastal adaptation and sea level rise.

Member Pawling referenced the idea of climate communities and resilience communities, and the potential of identifying strong community-related topics. She advised that scale is key with planning resilient neighborhoods.

Deputy Commissioner Peterson asked if the success or performance of various adaptation or resilience projects is tracked in any way. Is there a way we can look at past models and compare them to inform neighborhood or community resiliency planning?

Vice-Chair Kousky said no, that is a space in which more could be done but it's also a very difficult task.

Member Lynes stated it is a long-term disservice to have not monitored the outcome of various projects, for example in the forty years since the California Environmental Quality Act (CEQA) passed. It costs money to monitor the performance of projects, but it also is important for informing future priorities, decisions, and helping communities and state's learn and adapt policy in response to the outcomes of previous projects.

Deputy Commissioner Peterson referenced the savings that wetlands in New England have provided, \$625 million in avoided flood damages during Superstorm Sandy. How can that be generated in California? What is the worth of the flood plain? Guerneville had high rainfall events and San Jose had flooding this past year. Floodplains provide a tangible risk reduction, if we have the capacity to measure it. In an ideal situation, what would we measure and how would we apply that knowledge to risk reduction and insurance incentives? Recently, horizontal levees and nature-based solutions for slowing the movement of water have been proposed, but the main models we seem to have are focused on coral reefs and mangroves.

Member Sowers raised the value of making the definition of "nature" more flexible in the context of investment in nature-based solutions—expand perspectives beyond "wetlands" to also consider the extent of provided protection and the support of infrastructure. Relying on just the nature portion of nature-based solutions is limiting. Nature-based solutions like coral reefs are exciting but engineering advances can also interact with nature-based opportunities. A blend of engineering and nature could provide the buffering needed to better protect communities from future losses, or increase community resilience after a disaster occurs. There also needs to be extensive focus on mitigation and adaptation.

In addition, Member Sowers noted that the definition of resilience seems to be restrained. From an insurance standpoint, if planning is not in place then resilience does not exist. There is potential for a huge negative impact with large disasters. If you don't have a plan of how to recover than you are not fundamentally resilient. Look at the port

of New Orleans, as an example, the point of recovery is only at 80%. Resilience is more than just mitigation. How you fund mitigation can significantly improve outcomes and should be prioritized, but pre-disaster plans are needed for how to rebuild and recover, and that includes financial plans and technical plans.

Member Lynes raised that bond funding is limiting as it must be used before disasters occur. What are other tools the working group should be looking for?

Member Sowers emphasized the value of focusing on prevention rather than reactive solutions. From an insurance standpoint it works well. Get a community out of danger. There are many post-disaster solutions, but they rely on borrowing.

Member Baughman McLeod asked if climate-driven migration has been considered. Migration might be a tangible mechanism.

Deputy Commissioner Peterson asked whether an insurance solution could help people to relocate after an event. In an effort to avoid consecutive disasters in the same location, can we remove barriers to empower individuals to relocate if they so choose.

Member Frazier shared that homeowners insurance gives policyholders options. For example, some Paradise residents did not want to return to that region after the Camp Fire and were able to move other places, and their insurance coverage enabled that.

IX. Closing comments and adjournment

Chair Hill thanked everyone for the wide-ranging rich discussion from the OECD, to the ins-and-outs of the budgeting process for the state of California, to AXA Insurance and coastal resilience projects and potential ways to address extreme heat. All members are confronting the same hard issues. No one has done this before so it is not easy to take answers off the shelf. The working group has the opportunity to take what is learned through a variety of mechanisms to help the state of California. Chair Hill participated in flood discussion—there is a lot of great thinking happening there. As the working group works together to develop approaches to each peril, Chair Hill asks the group to try to keep in mind how to make insurance products accessible to consumers. The working group could miss the mark if they develop approaches that are too specific and don't consider the homeowners busy life. As the working group writes its report and makes recommendations, it should think about what will change behavior on ground. How do people understand insurance, acquire insurance, and make decisions about insurance products? The working group has an opportunity to help California and enter a dialogue that is happening across the globe regarding how insurance can help yield higher results. Chair Hill thanked Deputy Commissioner Peterson and Member Baughman McLeod for taking lead and apologized for not being there. Chair Hill encouraged the working group to drill down tomorrow to meet deadlines for solid components to build final report in September.

X. February 20, 8:45am, Reconvene

Deputy Commissioner Peterson welcomed working group members back for the second part of the meeting. The second day will be spent working on subgroup discussions and preparing for what is expected by the May meeting. Subgroups are responsible for having written recommendations and context in May. Subgroups are also responsible for addressing the common questions that the full group developed in November. Those include the following:

- What are the socioeconomic factors that need to be considered?
- Are there nature-based solutions to help solve or address the risk? How can they be employed pre-disaster?
- What are the top-down approaches to transferring risk?
- What are the bottom-up approaches to risk transfer, mitigation, and reducing insurance protection gaps?
- Are there opportunities for insurance incentives to reduce greenhouse gases or short-lived climate pollutant emissions? We do not want to miss opportunities to advance mitigation and adaptation?
- What are the community-level solutions? Could you do a community insurance policy?
- Are there approaches from native tribes that serve as strong models?
- How to facilitate thoughtful mobility when consumers want to relocate?
- How to proactively design communities to be resilient?

Subgroups are also responsible for proposing a visual aid, conceptual framework for their recommendations. Multiple visual aids, figures, or schematics are encouraged.

Deputy Commissioner Peterson is responsible for addressing the working group requests and bringing together introductory information that will help tie the recommendations report together. For example, should a subgroup like information on what other governments are doing, they should inquire with Deputy Commissioner Peterson. As noted in the Report Framework circulated yesterday, in today's subgroup breakout sessions, he would like each subgroup to identify two challenges the subgroup is working through, identify two recommendations the subgroup is excited about, and draft a diagram or figure that helps to visually communicate what the subgroup is developing. Deputy Commissioner then turned the meeting over to Chair Hill.

Chair Hill thanked the working group members for the wonderful progress of their work. She encouraged their use of the template that Deputy Commissioner Peterson created as it will provide a coherent look at what each subgroup is doing.

Member Pawling asked if their work will be folded into the Commissioner's legislative agenda, either in 2020 or 2021 or beyond.

Deputy Commissioner Peterson advised that in his view, and consistent with the working group's mission statement, he expects the working group's recommendations

are intended to inform the Commissioner's policy agenda, including legislative efforts, departmental priorities, and budgetary requests. The recommendations of the working group will potentially affect what the California Department of Insurance advocates for and what action other agencies may take that affect insurance downstream. In some cases, changes to statute may be part of recommendations, and in other cases the recommendations may be actions that the Commissioner can take now, or in conjunction with other agencies. Overall, many of the members have mentioned the need for better pre-disaster mitigation and pre-disaster risk communication. These are ideas that may lead to recommendations that primarily require prioritization for funding, and the Insurance Commissioner can prioritize advocating for such actions.

Member Frazier asked about the protocol of subgroups reaching out to other for information. For example, there are several California-based wildfire researchers that may be very helpful as a resource.

Deputy Commissioner Peterson advised that subgroups may determine who they want to interact with and agreed that building bridges to additional experts can have a positive effect for the subgroups, and provide information that the subgroups can share with the entire working group. For instance, understanding the approach researchers are taking to better understand wildfire risks may be useful to not only the wildfire group, but also as context for how to think about other perils. If the whole group wishes to reach out to someone there would need to be more of a consensus as to who and when, and could be discussed at the May meeting. He encouraged suggestions from all working group members to supplement the group's expertise.

Chair Hill confirmed the working group was agreeable to continuing to use the template laid out in the Report Concept Framework.

Deputy Commissioner Peterson encouraged the group to share any ideas for edits to the template when the group reconvenes.

Chair Hill reviewed that wordsmithing and editing to ensure a single voice for reader will occur at a later phase. Now is the time to focus on developing ideas.

XI. Review subgroup proposals

XII. Break for subgroups to work on proposals

XIII. Reports from each subgroup

Member Blumberg began the Extreme Heat subgroup's review of challenges, developments and what recommendations they were excited to report on, and described their ideas for a visual depiction of the approach. The challenges identified included the localized and specific nature of extreme heat contributing to a lack of consistent applicability of solutions. The subgroup sees an opportunity to insure some type of performance of a local heat action plan. He identified that local jurisdictions will

need to build infrastructure around extreme heat. He anticipates the local responses will be elastic. If there's a heat wave and more emergency responders are activated, the local jurisdiction will have to absorb the costs or pass them on in some way to the state or local residents.

Member Blumberg reviewed the subgroup's status on recommendations which included: the Insurance Commissioner working with the Department of Public Health, Department of Transportation, and other relevant agencies to understand the full impact costs of extreme heat, taking into consideration the health data and identifying patients who are on Medicare and Medi-Cal. In addition, Member Blumberg stated that the subgroup wanted to share another one of their potential recommendations: is to name the heat event, like how hurricanes are named. This will help communicate the risk when an extreme heat event is occurring, but will also improve pre-event planning and communication.

The subgroup graphic would identify how the Insurance Commissioner might convene a dialogue with local government leaders and practitioners around vetting the extreme heat risk transfer concepts.

Member Frazier suggested that that California State Association of Counties (CSAC) will have information on different programs that can link counties together on a specific topic, such as extreme heat planning or wildfire planning or new ideas on risk management.

Member Sowers advised that forming a risk pool makes sense, however, a highly exposed risk pool may not be insurable.

Member Baughman McLeod supports the recommendation to create and enable an environment for a risk pool. The Insurance Commissioner can develop an approach that contains a payout model such that payoffs come before to reduce loss like KLIP. How can things be done to bring money sooner so that lives are saved? Another big idea is a road show by Commissioner Lara to increase risk communication pre-disaster. Cities that connect insurance concepts with greater financial security for communities, would likely enable better outcomes.

Member Frazier shared that with a parametric product providing a payment stream once the trigger occurs, people will have to accept a different concept of insurance. Such products may not cover the full cost of an event, and the details of the trigger would be a new concept for people to accept.

Member Sowers pointed out that the parametric product would potentially not cover the full cost of an extreme heat event. In developing the product, one must consider whether the goal is to make a policyholder whole or mitigate some of the hazardous effects of extreme heat. It may be that mitigating even some of the impacts will have significant benefits to California communities.

Member Blumberg stated that local government would likely be the policyholder of such a risk transfer policy.

Member Sowers argued that the key issue is identifying the most effective point at which to intervene. Behavioral science research shows that people go back to flood prone areas because they can only afford to live in vulnerable locations. The working group must consider how people make decisions and how they behave. How language is phrased makes a difference in how people make decisions.

Member Frazier asserted that naming extreme heat events would pay dividends by starting to help people develop a vocabulary around events that could trigger a disaster. Education lets people know there are resources they can access.

Member Sowers stated that products can be available at the aggregator level but is that consistent with where there is value? Can they build trust?

Member Pawling suggested using a model of a community center versus an institution.

Member Vinukollu suggested that the group begin thinking more about nature-based solutions. If there is not risk management and long-term risk mitigation, insurance will fail over time.

Member Sowers argued that the subgroup discussed heat scale. Nature-based solutions, such as planting 5000 trees, may not make an impact. How much trust does the group want to put into nature-based solutions? Are there data to support a nature-based solution to the risk of extreme heat events?

Member Blumberg noted that there were some data available for the Los Angeles area, and maybe other areas, about the value of urban forests and urban greening when it comes to temperature reductions. The characteristics of surfaces could be a mitigation solution, and this could be a link to nature-based solutions.

Member Passero asked what energy supply cooling centers require. How might these considerations be integrated to internalize this shift so that the solutions the group is suggesting move from problematic sources to a new economy.

Member Sowers suggested the consideration of free public transportation or free App-based ride-sharing rides may be a mechanism to deal with extreme events. These are the types of decisions to be made along the way. If a cooling center is 10 miles away, what is the result, versus 3 miles away? Vulnerable populations can't easily travel 10 miles. There is a bigger question around the science behind this. It goes back to big data request—what is the real impact? Is measurement needed to make a decision? What is enough?

Member Passero suggested thinking about adaptation or resilience. How might the working group use a more systematic way to drive transition?

Member Vinukollu discussed the challenges identified by the Flood Sea Level Rise subgroup. One primary challenge is to identify the culture of resilience in the state and, broader, in the country of what is observable. The subgroup finds that if a cognitive bias that things are not really changing exists, implementing decisions may be difficult. Another challenge is understanding the extent to which flood maps tie into the local planning. Local authorities make decisions based on these maps. Are the maps accurate?

Member Lynes recognized the need for decisions to be made at various local levels, which presents a challenge for the working group to make recommendations. Lynes posed the question as to what programs have worked at various local levels in the past? Are there any regional solutions that have been employed, experimented with, or considered?

Member Pawling stated that it is up to local government to prioritize and engage. Resources, like fire-use maps, are available. The question is how to make this information accessible and understandable to the people that need it. Local governments could benefit from improved maps, and individuals could benefit from more accessible, understandable maps. If we are going to communicate risk as effectively as possible, we should consider both of these audiences.

Deputy Commissioner Peterson noted that he is concerned that the maps may not be aligned with the need. If maps are either too general or out-of-date, then they may not influence decisions on how to prioritize mitigation, or where and how to build. Is there a way that wildfire mapping and flood mapping can enhance each other? The wildfire mapping system has historically relied on categories, such as moderate, high, and very high wildfire hazard.

Member Lynes asserted that the politics at the local level may be intense. Sea level rise is already a contentious debate in coastal communities, and even planning for sea level rise has been a challenge for local and state governments.

Member Lynes asked if people to choose to develop in high-risk areas can it be with the understanding that they will not be able to purchase insurance, or that insurance will not be regulated by CDI? How could insurance availability be understood before local governments make choices on where to develop?

Deputy Commissioner Peterson raised that state parks and state lands make up a large percentage of coastal California. When you think about state parks, the Coastal Commission, and then the series of local governments, there are many potential jurisdictions for recommendations.

Member Lynes asserted there is potential for contention with the California Coastal Commission as developers want to develop. These contentious issues are already coming to the forefront in some communities.

Member Blumberg shared that approximately one third of coastal lands are state parks which are self-insured. Is there a way to utilize the state's interest in such a large portion of the coastline? Will local decisions on how to address sea level rise impact the options for state owned lands, or can decisions be coordinated? Are there physical state assets, like buildings that would require relocation?

Chair Hill shared that the NFIP was born out of good intentions. It had to have actuarially sound programs. This was changed over time and the NFIP has been in repeated financial challenges. And the premiums do not match risk.

Member Vinukollu raised the idea of local authorities having their own maps. There is no easy way for the average consumer to view flood maps. They exist but are not readily accessible. Maps also present a very binary view of peril—Is a consumer in or out of a flood zone? It may be helpful for a study to provide a more granular view of risk and California can take a lead role. In high risk zones, industry will not want to write policies. Also relevant are Coastal Barrier Resources System units, or “COBRA zones,” where development is prohibited and NFIP coverage is not provided in that region.

Member Passero asked if there is something with state parks that can be done for sea level rise. Also, how might the working group help educate people on how to approach private property along the coast? Looking at mitigation in high speed rail and state actions could help develop a model.

Member Passero presented an update for the Wildfire Subgroup, noting that the group is discussing mapping as well, in addition to building codes, and incentives for risk reduction. Maps that identify wildfire risk in the state are foundational to inform land use decisions and educate individuals and communities about their level of risk. When it comes to applying these maps, how can insurance play a role earlier in the process. The subgroup is working to be more future-thinking and dynamic. How do we incentivize pre-disaster risk reduction to avoid future losses, and the ensuing consequences for homeowners insurance markets.

Member Blumberg asked about brush clearing ordinances. Defensible space is written in law in some cases for homeowners. This is pre-disaster mitigation that the Department of Forestry and Fire Protection has authority to enforce. California has historically relied on these laws for pre-disaster mitigation to slow the spread of future wildfires. How can we encourage this and make sure that it is consistently enforced? If it can be consistently enforced, then how do we link it with insurance.

Member Frazier advised that Senator Dodd introduced a bill last year to develop model defensible space in order to have a state and community level standard. The bill was passed by the legislature and signed by the Governor.

Deputy Commissioner Peterson noted that the model ordinance should be developed quite quickly and then local governments could adopt it for their own jurisdiction. The

frequency and responsibility of enforcement of such a law is still being discussed.

Member Passero asserted that another challenge is how to connect loss and the total cost associated with recovery. Costs of recovery go well beyond the physical loss, and can include damages related to smoke, clearing of debris, testing and considerations regarding water quality. We may not have a good understanding of how well communities recover after such disasters.

Member Frazier added that the Institute for Building and Home Safety (IBHS) developed research-based guidance on wildfire risk reduction for homes, and are considering how the proximity of homes to each other affect wildfire spread and risk of losses. They have also researched what coating could be put on homes. Exterior coating can be applied to homes, but it only lasts a year. There is much left to be done and more recommendations are likely this year. This is a topic area where the working group might have an interest.

Member Sowers identified that communities themselves approach wildfire resistance by organizing physical risk reduction efforts. There are common practices of communities clearing brush on high-risk fire days. Soft recommendations exist for measures a community can undertake to prepare. The power and ability of a community should be considered. For example, moving preparation days to September may be a strategic way to improve the effectiveness of existing community efforts. Moving the timing of existing efforts does not add extra burden but could make a substantial difference in risk reduction.

Member Vinukollu asked how does this fall into community insurance perspective? If a community had an insurance policy, would that complement mitigation actions, like the brush removal days Member Sowers mentioned? Can we build more comprehensive community approaches?

Deputy Commissioner Peterson suggested that Boulder, Colorado organizes “chipping days” and locations where people can drop off the brush they have cleared to be turned into wood chips. Something like the number of “chipping days” or “brush clearing days” or the percent participation by the community could be metrics that feed into a stronger understanding of the type and degree of mitigation activities that are happening in wildfire prone areas. Peterson will try to find and circulate additional information to the group on examples of these types of efforts.

Member Passero shared the focus would be on mapping, fire-wise communities and guidance. Is there a way to capture what’s being done on the community level to reduce wildfire risk, identify what works and how it works? Look for regional consistency among fire-wise communities, or fire-adapted communities; the communities who have wildfire mitigation plans and projects.

Member Passero then noted that the subgroup discussed building codes and land use, how do we build better and make land use decisions that reduce wildfire risks?

How can building codes be informed and updated based on post-loss knowledge? Should building codes apply to more areas of the state, or should we be working on an updated standard for building in moderate to high wildfire risk areas.

Are there designations where building should not be considered due to high fire risk? Member Passero discussed relocation after wildfire destruction, getting to incentives and insurance mechanisms for people to leave if they lost their homes. Member Passero asked about the role of Cal OES with pre-loss disaster mitigation. Between Cal OES and the Department of Forestry and Fire Protection, California has existing efforts for pre-disaster mitigation spending, but a more thorough framework and prioritization system may be very useful to the state.

Deputy Commissioner Peterson noted that FEMA is setting aside 6% of disaster funding for pre-disaster mitigation, and in the current proposed budget, the Governor has proposed \$100 million for home hardening grants or loans. The \$100 is composed of \$25 million California General Fund and \$75 million in anticipated money from FEMA. Peterson stated that the Wildfire Group may need a visual aid for their work that included multiple levels: home, community, regional, and state. Consideration of mitigation strategies, more resilient building codes, and closing the insurance protection gap could benefit from recommendations at all these levels.

Deputy Commissioner asked if there were additional questions or thoughts from the group in closing? He encouraged the group to make visual aids for their recommendations a major goal between this meeting and next meeting. Figures, flowcharts, and concept maps can help illuminate the problem and identify where risk transfer, nature-based approaches, and insurance could be specifically linked.

Deputy Commissioner Peterson asked for any public comment or questions. There was none. Peterson passed the meeting back to Chair Hill for final comments, directions, and to adjourn.

XIV. Discuss expectations for May meeting

Chair Hill thanked everyone for their work and recognized the excellent input that will develop the subgroups' work before the next meeting. She encouraged subgroups to submit their drafts to Deputy Commissioner Peterson in advance of the May meeting. Chair Hill is excited about the interesting and thought-provoking ideas raised at this meeting. She apologized for not being able to be there in person this time but will be there in May.

Deputy Commissioner Peterson thanked the working group for their work, persistence, and patience.