Hawaii Real Estate Commission

CONDORAMA XIV

PRESENTED BY CAI HAWAII

April 19, 2025

Condorama XIV

April 19, 2025

AGENDA

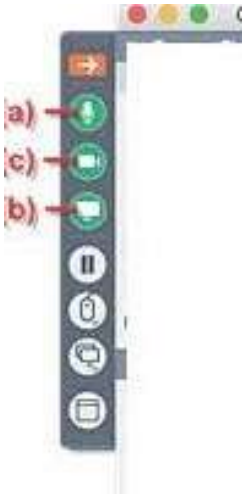
09:00 – 09:05 a.m.	**Melanie Oyama**	Welcome & Introductions
09:05 – 09:50 a.m.	**Wes Brum**	Basics of Flood Insurance
09:50 – 10:55 a.m.	**Clifford J. Treese**	California Wildfires: Community Association Risk Management and Insurance in Hazardous Times
10:55 – 11:00 a.m.	**Melanie Oyama**	Closing

Mahalo

Milton Motooka
Motooka Oyama & Lau

Wes Brum
Insurance Associates

Richar Ma
Presentation Resources



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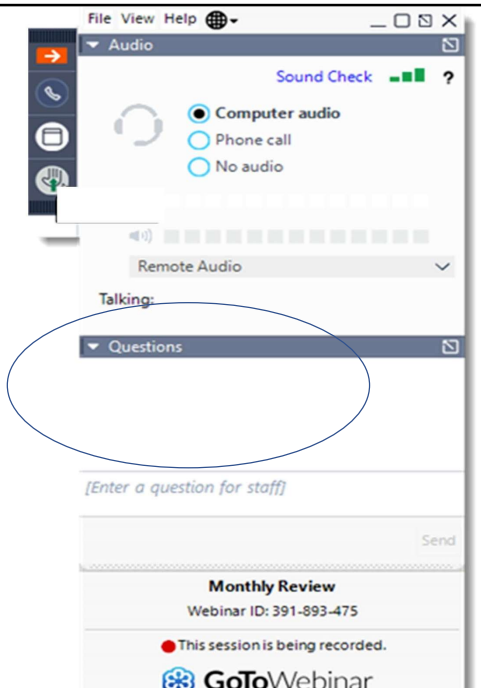
QUESTIONS

Submit them using the GoToWebinar Tool "Questions"



CAI Hawaii
COMMUNITY ASSOCIATIONS INSTITUTE

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HAWAII CHAPTER community ASSOCIATIONS INSTITUTE

This webinar is pending approval by the Community Association Managers International Certification Board (CAMICB) for 2 credit hours to fulfill continuing education requirements for CMCA® certification.

INFO@CAIHAWAII.ORG

Our Speakers

Wes Brum, CIRMS, ANFI, AIS is an Account Executive at Insurance Associates, Inc., holding the ANFI, CIRMS, and AIS designations. Previously, he was the WYO Principal Coordinator and Flood Manager at Hawaii's largest Wright Your Own Company for 10 years and managed their Excess & Surplus Lines department. Wes has served as Vice President and President of the Underwriters Association of Hawaii, hosted continuing education courses, and spoken at the National Flood Insurance Conference. He is also active in the CAI-Hawaii Chapter and other insurance associations.

Our Speakers

Clifford J. Treese, CIRMS® is founder and president of Association Consulting, Inc and a nationally recognized consultant specializing in underwriting, risk management, and insurance for community associations. With extensive experience in community operations and project standards for mortgage markets, he has worked on all phases of association development and asset management. Treese has authored publications, taught seminars, and presented internationally. A past national president of the Community Associations Institute, he has received the Distinguished Service Award twice. He holds a degree from Stanford University and the CIRMS® designation.

BASICS OF FLOOD INSURANCE

Condorama XIV – Presented by Wes Brum, CIRMS, ANFI, AIS

1

PRESENTATION OUTLINE

- **Basics of Flood Insurance**
  - **Part One** – Who/What/When/Why/Where of Flood Insurance
  - **Part Two** – Current Financial State of The NFIP
  - **Part Three** – NFIP's Risk Rating 2.0
    - Modern Technology and Data
    - Flood Risk Variables & Property Characteristics
  - **Part Four** – NFIP Coverage vs. Private Flood Coverage
  - **Part Five** – Flood Insurance Claims Process
    - What IS and IS NOT Covered

2

- 1. Every building has flood risk.
- 2. Flood insurance can be purchased in any flood zone.
- 3. Building and contents coverage limits are separate purchase decisions.
- 4. A federal disaster declaration is **NOT** required for a policyholder to file a flood insurance claim.
- 6. The SFIP provides limited coverage for basements.
- 7. The SFIP excludes time element exposures. (long-term erosion)

EVERYONE SHOULD KNOW

3

- **Who** needs flood insurance – in short, everyone should consider purchasing flood insurance
- **What** is flood insurance; insurance that covers damages caused by flooding, such as heavy rains, hurricanes (storm-surge), overflow of rivers or streams.
- **When** should you buy flood insurance; waiting until its raining or storming, is too late.
- **Where** to buy flood insurance; contact your insurance agent.

WHO / WHAT / WHEN / WHY / WHERE OF FLOOD INSURANCE

4

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

- The National Flood Insurance Program (NFIP) is the primary source of flood insurance coverage in the United States
- Managed by the Federal Emergency Management Agency (FEMA)
- Provides flood insurance to property owners and encourages communities to adopt floodplain management regulations.

5

- The National Flood Insurance Act of 1968, congress approved and created the National Flood Insurance Program (NFIP).
  - Primarily due to the lack of availability of private flood insurance.
  - Increased request for federal disaster assistance due to flooding.
  - NFIP Primary Goal – Preservation of lives and property.
- The NFIP was originally created as a self-supporting entity, where administrative operating expenses, flood claims, etc. were to be paid through premiums collected.

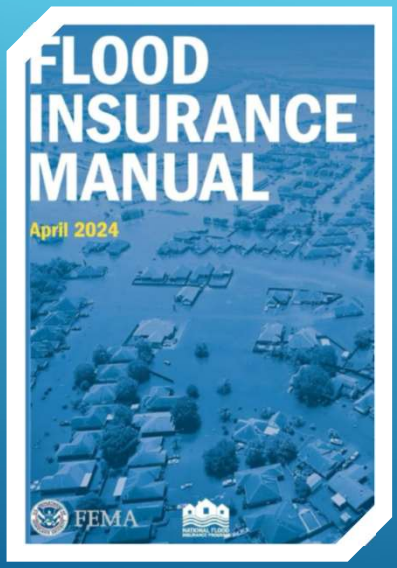
NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

6

CURRENT FINANCIAL STATE OF THE NFIP

- FEMA is currently $22.5 billion in debt
- Authority to borrow up to $30.4 billion
  - Previously borrowed $20.5 billion following hurricanes Katrina, Sandy, and Harvy
- https://www.fema.gov/about/reports-and-data/keywords/nfip-financial-statements

7



NFIP FLOOD INSURANCE MANUAL

- Access the NFIP Flood Insurance Manual Online:
  - https://www.fema.gov/flood-insurance/work-with-nfip/manuals
- Flood Insurance Manual Include:
  - Introduction/History of the NFIP
  - Things to Know Before You Start
  - How to Write
  - How to Endorse
  - How to Cancel
  - Appendices

8

WHAT IS A FLOOD?

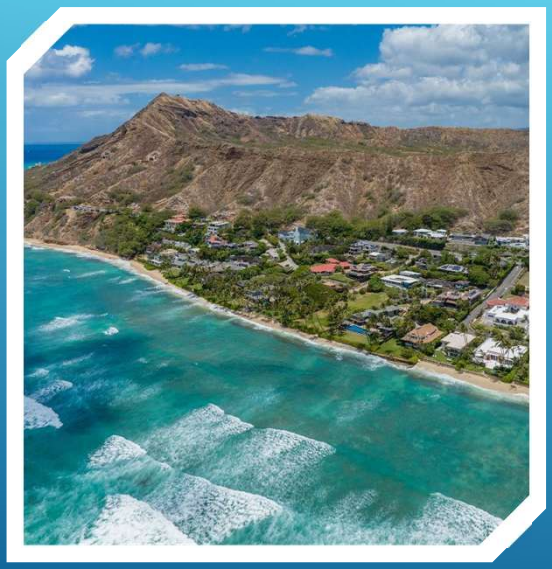
Standard Flood Insurance Policy (SFIP) Definition of "Flood"

9

SFIP DEFINITION OF "FLOOD"

- A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (one of which is your property) from:
  - Overflow of inland or tidal waters
  - b. Unusual and rapid accumulation or runoff of surface waters from any source
  - c. Mudflow

10



- A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (one of which is your property) from:
- a. Overflow of inland or tidal waters;
- b. Unusual and rapid accumulation or runoff of surface waters from any source;
- c. Mudflow.

TWO OR MORE ACRES

11

NOT WEATHER RELATED

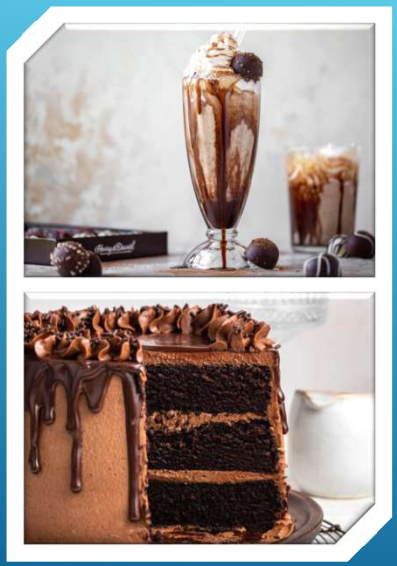
- A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (one of which is your property) from:
- a. Overflow of inland or tidal waters;
- b. Unusual and rapid accumulation or runoff of surface waters **from any source**;
- c. Mudflow.

12

SFIP DEFINITION OF "FLOOD" - **MUDFLOW**

- A river of liquid and flowing mud on the surface of normally dry land areas as when earth is carried by a current of water.
- **Not Mudflows:** • Landslide • Slope failure • Saturated soil mass

13



MUDFLOW VS. MUDSLIDE/LANDSLIDE

- According to FEMA, a mudflow occurs when liquid and flowing mud moves over the surface of normally dry land. In contrast, mudslides happen when a mass of earth or rock travels downhill.
- Flood claims become "sticky" when a structure is located at the base of a hillside
  - **Is it Chocolate Cake or a Chocolate Shake?**

14

- Collapse or subsidence of land along the shore of a lake or similar body of water.
- Caused by waves or currents of water exceeding cyclical levels.
- Results in flooding.
  - Gradual or Long-Term Erosion is not covered under a SFIP

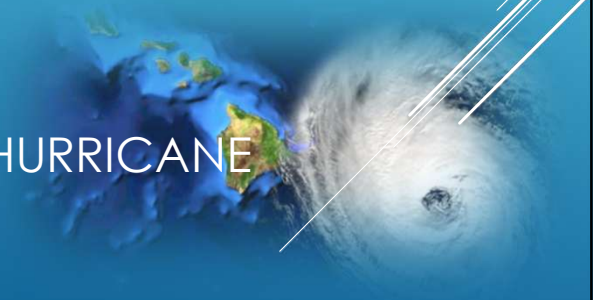
FLOOD RELATED EROSION

15

Hurricane - Storm Surge

- Defined by NOAA as an abnormal water level rise generated by a storm and above the predicted astronomical tide (normal tide levels).

Video Credit: National Oceanic and Atmospheric Administration, U.S. Department of Commerce and Smithsonian Institution. For more information, see: http://ocean.si.edu/



FLOODING CAUSED BY A HURRICANE

16

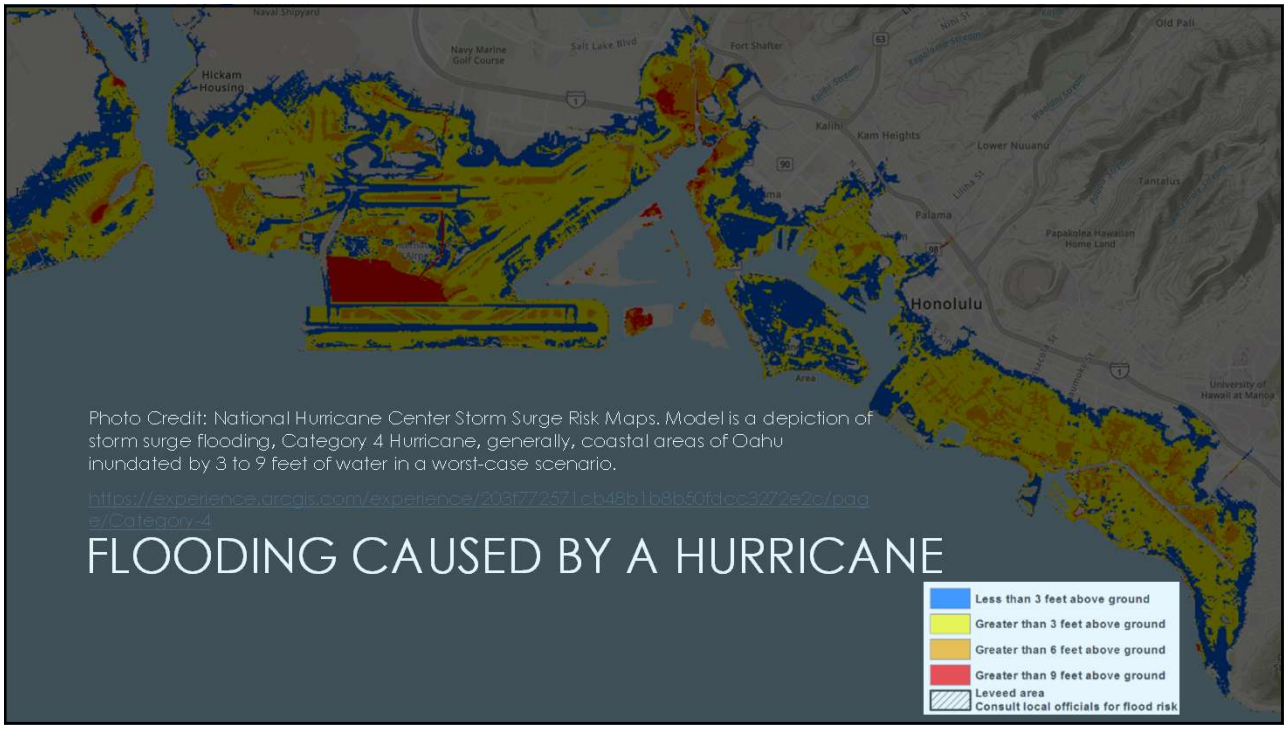


Photo Credit: National Hurricane Center Storm Surge Risk Maps. Model is a depiction of storm surge flooding, Category 4 Hurricane, generally, coastal areas of Oahu inundated by 3 to 9 feet of water in a worst-case scenario.

https://experience.arcgis.com/experience/203f772571cb45b1b8b50fdcc3272e2c/page/Category-4

FLOODING CAUSED BY A HURRICANE

17

WHO HAS FLOOD RISK?

All Property Owners

All Flood Zones

18

- **Special Flood Hazard Areas (SFHAs)**
  - Mandatory Purchase Zones
    - A, AE, AH, AO
    - VE
- **Non-Special Flood Hazard Areas (Non-SFHAs)**
  - Voluntary Purchase Zones
    - X
      D

SPECIAL FLOOD HAZARD AREAS & NON-SPECIAL FLOOD HAZARD AREAS

19

- **A or V Flood Zones**
  - Designated Loan (A loan secured by a building or mobile home that is located or to be located in a "Special Flood Hazard Area" in which flood insurance is available under the Act.)

Hawaii Revised Condominium Statutes

§514B-143 Insurance

- Flood insurance shall also be maintained if the property is located in a special flood hazard area as delineated on flood maps issued by the Federal Emergency Management Agency. The flood insurance policy shall comply with the requirements of the National Flood Insurance Program and the Federal Insurance and Mitigation Administration.

WHO **MUST** BUY FLOOD INSURANCE?

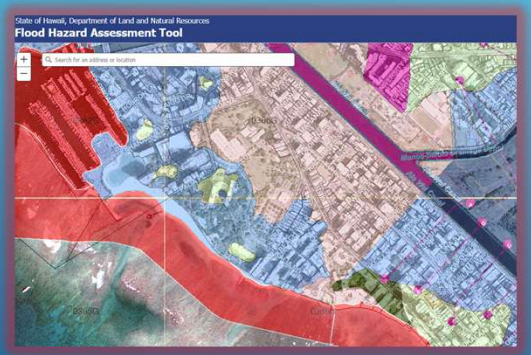
20

WHO **SHOULD** BUY FLOOD INSURANCE?

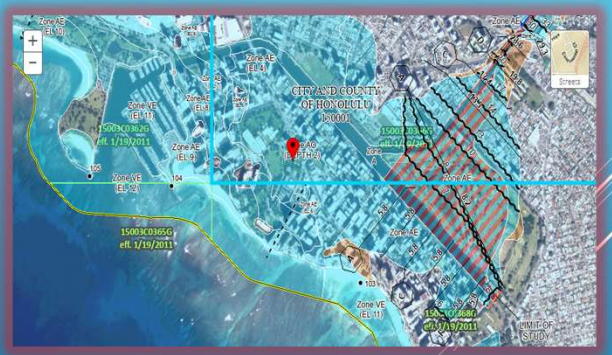
- EVERYONE!
  - Over 40% of Flood Claims Reported are from Non-SFHAs. – Zone X & D.
- Key Points
  - Understand your flood risk
  - Know your flood zone
  - Have a plan

21

- **Flood Hazard Assessment Tool**
- http://gis.hawaiinfip.org/FHAT/



- **FEMA Flood Map Service Center**
- https://msc.fema.gov/portal/home



WHAT FLOOD ZONE ARE YOU LOCATED IN?

22

NEW FLOOD ZONE MAPS FOR THE ISLAND OF OAHU SPRING 2026

23

Timeline for Oahu's Flood Insurance Rate Map (FIRM) Revision

- **2019 – 2023** – FEMA Engineering Analysis
- **2021 – 2023** – Flood Risk Review Meetings
- **July 31, 2024** – Preliminary Maps Issued
- **November 4th and 6th 2024** – Public Open Houses Held by FEMA
- **2024 – 2026** – Ongoing Community Outreach by FEMA
- **Spring 2025** – Start of Appeal Period (more information to follow)
- **Summer 2025** – End of Appeal Period
- **Fall 2025** – Letter of Final Zone Determination (LFD) Issued by FEMA
- **Spring 2026** – New Flood Insurance Rate Maps (FIRMS) Becomes Effective

2026 PRELIMINARY FLOOD ZONE MAP

HTTPS://CCHNL.MAPS.ARCGIS.COM/APPS/INSTANT/MEDIA/INDEX.HTML?APPID=89832A7160374ADEB2D6A89F11E25AB5

24

TSUNAMI EVACUATION ZONES

- Hawaii Emergency Management Agency
  - https://dod.hawaii.gov/hiema/public-resources/tsunami-evacuation-zone/
- Know Your Zone!

25

NFIP – RISK RATING 2.0

26

- Effective October 1,2022
  - All New Business Policies
- Effective April 1, 2022
  - All New & Renewal Policies

NFIP – PROGRAM CHANGES – RISK RATING 2.0

27

- **Legacy Rating Methodology**
  - Since the late 1970's, rates have predominately been based on relatively static measurements:
    - Flood Zone
    - Base Flood Elevation
    - Foundation Type
    - Structural Elevation
  - Standardized rating tables will no longer be used, rates will be calculated using an algorithm.

NFIP – PROGRAM CHANGES – LEGACY RATING

28

- **Risk Rating 2.0 – New Rating Methodology**
  - Distance to Flooding Source & Flood Type
    - *Includes storm surge, tsunami, coastal erosion*
  - Building Occupancy
  - Construction Type
    - *Frame, Masonry, Other*
  - Foundation Type
  - Ground Elevation
  - First Floor Height
  - Number of Floors
  - Prior Claims

NFIP – PROGRAM CHANGES – NEW RATING VARIABLES

29

- The Mandatory Purchase requirement
- Floodplain Management
- Statutory caps on annual individual rate increases
- Building/Contents maximum limits

NFIP – WHAT IS NOT CHANGING

30

NFIP FLOOD INSURANCE POLICIES

31

National Flood Insurance Program
General Property Form
Standard Flood Insurance Policy
F-123 / October 2021

FEMA

National Flood Insurance Program
Dwelling Form
Standard Flood Insurance Policy
F-122 / October 2021

FEMA

National Flood Insurance Program
Residential Condominium Building Association Policy
Standard Flood Insurance Policy
F-144 / October 2021

FEMA

Dwelling Form	• Residential Structures: 1 – 4 Family Dwelling
General Property Form	• Commercial/Non-Residential
Residential Condominium Building Association Policy (RCBAP)	• Must have bylaws • More than 75% of the total square footage must be residential

NFIP – POLICY TYPES

32

NFIP – MAXIMUM COVERAGE LIMITS

- **Dwelling Form – 1-4 Family Dwelling**
  - $250,000 Building Coverage / $100,000 Contents Coverage
- **General Property Form – Non-Residential**
  - $500,000 Building Coverage / $500,000 Contents Coverage
- **Residential Condominium Building Association Policy (RCBAP)**
  - $250,000 x Total number of units within the structure / $100,000 Contents Coverage
  - Example: Structure has 100 Units, total Building Coverage limit is $25,000,000 ($250,000 x 100 Units = $25,000,000)
  - 80% Co-Insurance Requirement

33

PRIVATE FLOOD INSURANCE OPTIONS

- **Dwelling Form – 1-4 Family Dwelling**
  - $4,000,000+ Building Coverage / $500,000 Contents Coverage
  - Unattached Structures $100,000
  - Pool Repair & Fill $20,000
  - Temporary Living Expenses $20,000
- **General Property Form – Non-Residential**
  - $4,000,000 Building Coverage / $4,000,000 Contents Coverage
  - Pool Repair & Fill $20,000
  - Business Interruption $50,000
- **Residential Condominium Building Association Policy (RCBAP)**
  - $15,000,000 Building Coverage / $500,000 Contents Coverage
  - Pool Repair & Fill $20,000

34

- **What IS Covered under Building Property coverage:**
  - The insured building and its foundation
  - The electrical systems
  - Central air-conditioning equipment, furnaces, and water heaters
  - Permanently installed carpeting over an unfinished floor
  - Permanently installed paneling, wallboard, bookcases, and cabinets
  - Foundation walls, anchorage systems, and staircases attached to the building
  - Fuel tanks and the fuel in them, solar energy equipment, and well water tanks and pumps
  - Furnaces, water heaters, heat pumps, and sump pumps

NFIP - RCBAP – WHAT IS COVERED?

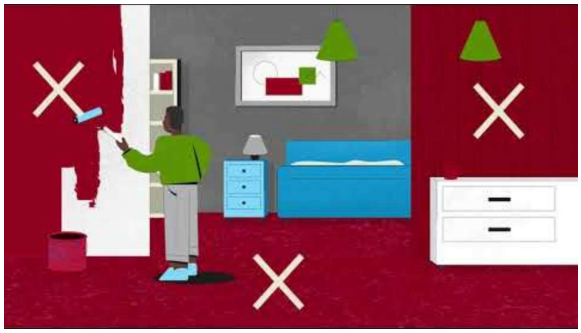
35

- Flooding can cause or worsen cracks in foundations and walls due to water pressure, soil expansion, and the weakening of structural materials.
  - Leading to structural instability

Structural Instability: Large cracks can compromise the structural integrity of the foundation, potentially leading to instability and even collapse.

FOUNDATION & CRACKING CONSIDERATIONS

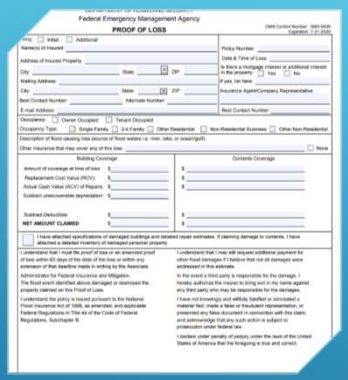
36



BASEMENT COVERAGE RESTRICTIONS

Video Credit: FEMA/NFIP

37


Federal Emergency Management Agency

PROOF OF LOSS

NFIP FLOOD CLAIM PROCESS

- **Step 1:** Contact your insurance agent to report your flood loss.
  - Generally, the adjuster will contact you within 24-48 hours after the claim is reported.
  - Take photos and/or videos
- **Step 2:** Prepare for your inspection.
  - For building items, keep samples (swatches) and also photograph or list items make, model, and serial number.
  - Save all invoices and receipts!
- **Step 3:** Work with your adjuster
  - Will provide you with a detailed damage estimate and a Proof of Loss document.
  - Note: If your adjuster has questions about complicated damage, they may request assistance from an engineer or other experts. These experts can help determine the cause and extent of damage.
- **Step 4:** Document your loss and receive payment

38

NFIP FLOOD INSURANCE CLAIM PROCESS

Video Credit: FEMA/NFIP

39

BE FLOOD SMART

- Invest in Flood Insurance
- Be Prepared and Have a Plan of Evacuation
- Install a Sump Pump and Backflow Valve
- Elevate Utilities
- Landscape to Improve Runoff

40

RESOURCE LINKS

National Flood Insurance Program: https://www.fema.gov/flood-insurance

Map Service Center: https://msc.fema.gov/portal/home

NFIP Flood Insurance Manual: https://www.fema.gov/flood-insurance/work-with-nfip/manuals#flood-insurance

NFIP Bulletins: https://nfipservices.floodsmart.gov/wyobul2020.html

NFIP Claims Handbook: https://www.fema.gov/sites/default/files/2020-05/FINAL_ClaimsHandbook_10252017.pdf

Risk Rating 2.0 – Equity in Action: https://www.fema.gov/flood-insurance/risk-rating

FEMA Elevation Certificate: https://www.fema.gov/sites/default/files/2020-07/fema_nfip_elevation-certificate-form-instructions_feb-2020.pdf

NOAA Climate Change: https://www.noaa.gov/climate

41

Wes Brum, CIRMS, ANFI, AIS
Insurance Associates, Inc
800 Bethel Street STE 200
Phone: 808-526-9261
Email: wes@insuringhawaii.com

ALOHA & THANK YOU

42

CONDORAMA XIV

California Wildfires:

Community Association Risk Management & Insurance in Hazardous Times

Presented by Clifford J. Treese, CIRMS®
President, Association Consulting, Inc.

April 19, 2025

CONTENTS

Part One: Introduction and Outline

1.1 Association Housing History. Prior to WWII, association housing (in condominiums, planned developments and cooperatives) was a small part of U.S. housing. Beginning in the 1950s, however, community association housing soon became the greatest extension of homeownership since the New Deal Housing Reforms and the GI Bill enacted at the end of WWII. By 2023, 81% of new housing sold was in one of the three basic types of associations.

1.2 Hawaii and California. Hawaii enacted one of the first condominium enabling statutes. California was a leader in housing developments based on common interest land use requirements. Currently, both states have a high percentage of homeownership in the three types of community associations.

1.3 Housing Growth and Sustainability. From the 1960s, however, the growth of U.S. housing including association housing was never firmly anchored in sustainable environmental and development practices that recognized the possible perils produced by climate change and certain geopolitical matters. Evidence-based decision-making concerning association housing development and risk management often became subordinate to purely economic goals such as minimizing assessment costs and increasing home resale values.

1.4 New Normal – Repetitive Losses. The repetitive nature and impact of climate related losses such as those triggered by wildfires, flooding and severe convective storms – all have become a "new normal" in risks faced by associations and there is no sign of those risks moderating. See **#3.2.7 below**.

1.5 Risk Management Enhanced. Over the last 25 years, the central role of risk management in an association's insurance program has been minimized while insurance costs (over which the association has little control) have become a distracting focus. One lesson from wildfires is that risk management needs to take a central role in understanding and minimizing property losses including losses from wildfires. As with the New Normal just discussed, risk management needs to take a role in the enhancing a "partnership in community".

Part Two: Placing Risk Management and Insurance in Perspective

2.1 Basic Definitions

2.1.1 "Risk management is the process of making and carrying out decisions that minimize the adverse effects of accidental losses. It involves five steps:"

1. Identifying exposures to loss (for Property, Liability, Income & Personnel Risks)
2. Examining alternative techniques (Risk Control and Risk Financing)
3. Selecting the best techniques
4. Implementing the chosen techniques
5. Monitoring and improving the risk management program

CAI Risk Management, 2nd Ed., How Community Associations Protect Themselves

2.1.2 "Insurance contracts or policies are offered through the private sector and governmental agencies. Property and liability insurance can be divided into commercial and personal insurance. Association's purchase commercial insurance while association homeowners purchase personal insurance."

CAI Insurance: How Community Associations Protect Themselves

See also the National Association of Insurance Commissioners (NAIC): "Insurance Glossary - an economic device transferring risk from an individual to a company and reducing the uncertainty of risk via pooling."

2.2 CAI Basic Risk Management Policy Statement

[Adopted by the CAI Board of Trustees on October 11, 2012]

CAI believes that an effective risk management program can best be achieved if associations and their governing boards work with recognized community association professionals. CAI further believes that a comprehensive association insurance program must focus on meeting a broad range of legal and lender requirements, while recognizing that the governing board is the trustee of the owners in insurance matters. This program (collectively, risk management and insurance) requires that risks of loss be fully evaluated and that funding for such loss (whether by commercial insurance or self-insurance) must be completely analyzed.

2.3 Risk Management in the Context of Wildfires and the New Normal

2.3.1 **Traditionally**, the risk management and governance decisions of association boards of directors have been guided by the state's enabling statute, governing documents and mortgage lender requirements.

(1) **More generally**, boards have been guided by fiduciary standards and variations of the business judgement rule.

(2) **More specifically**, making evidence-based decisions concerning association physical asset management (an important aspect of risk management) – this has primarily been centered on reserve studies.\

California Board of Directors Fiduciary Duties

California Business Judgement Rule Mutual Benefit Corporations

Hawaii Board of Directors' Guide Fiduciary Duties

Hawaii Real Estate Branch, Condominium Business Judgment Rule

2.3.2 **Going forward**, while these guides remain useful and necessary, their generality and primary focus on reserve studies does not help in making data-driven decisions concerning physical asset management in the New Normal. Increasingly, these types of data-driven decisions are crucial if the association's risk management program is to address both direct and indirect losses arising from wildfires and similar perils. Risk management can be controlled by boards of directors while the cost of insurance cannot be directly controlled by boards.

Part Three: Why are These Times So Hazardous?

3.1 **Or,** maybe the times are not so hazardous? – it is just the people and their decision-making that are the problem?

Table: Six Decision-Making Biases

Bias	Comment
Myopia	a tendency to focus on overly short future time horizons when appraising immediate costs and the potential benefits of protective investments
Amnesia	a tendency to forget too quickly the lessons of past disasters
Optimism	a tendency to underestimate the likelihood that losses will occur from future hazards
Inertia	a tendency to maintain the status quo or adopt a default option when there is uncertainty about the potential benefits of investing in alternative protective measures
Simplification	a tendency to selectively attend to only a subset of the relevant facts to consider when making choices involving risk
Herding	a tendency to base choices on the observed actions of others

From: Why We Underprepare for Disasters (Wharton Issue Brief) [Quoting, underline mine] "In our book *The Ostrich Paradox*, we characterize six decision-making biases that cause individuals, communities and organizations to underinvest in protection against low-probability, high-consequence events. We then propose a behavioral risk audit that recognizes that these biases are difficult to overcome but that they can be used to develop strategies to improve individuals' decision making processes in preparing for disasters before they occur."

3.2 **But, these are hazardous times – as measured by various costs.**

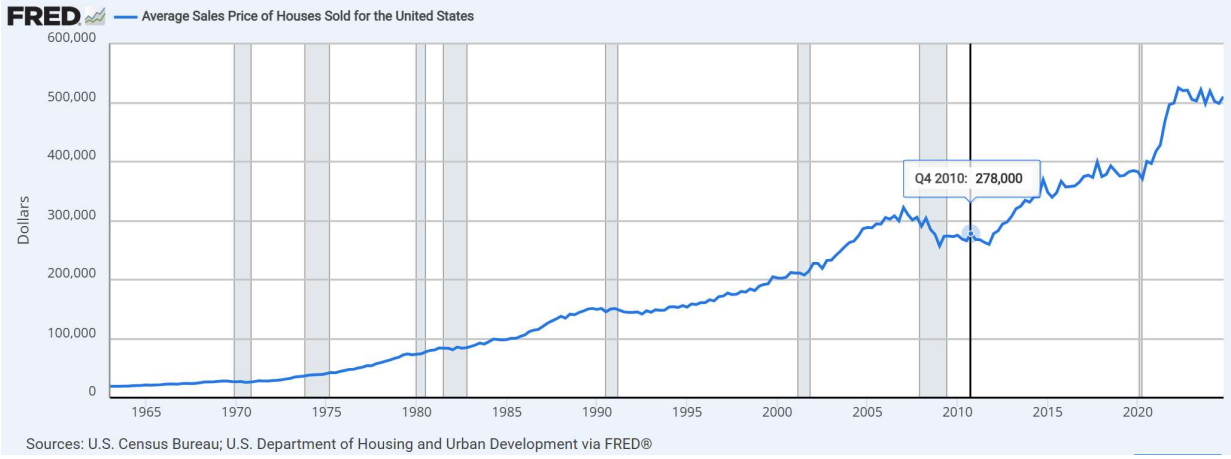
3.2.1 **Increased homeownership cost and reconstruction cost:**

(1) Homeownership cost has become significantly more expensive. Using data from the U.S. Census Bureau, the price-to-income ratio for Americans in 1960 as well as in 2019.

In 1960, the median home cost $11,900, while the median income was $5,600, indicating a price-to-income ratio of 2.1.

By contrast, in 2019 the median home cost $240,500 with an estimated median income of $68,703, a price-to-income ratio of 3.5.

(2) FRED Average Sale Home Sale Prices from 1965 through Q4 2025



See also Tracking the American Dream from 1890 -1990 (2 pp.)

(3) Reconstruction Cost Up 60% Since 2014

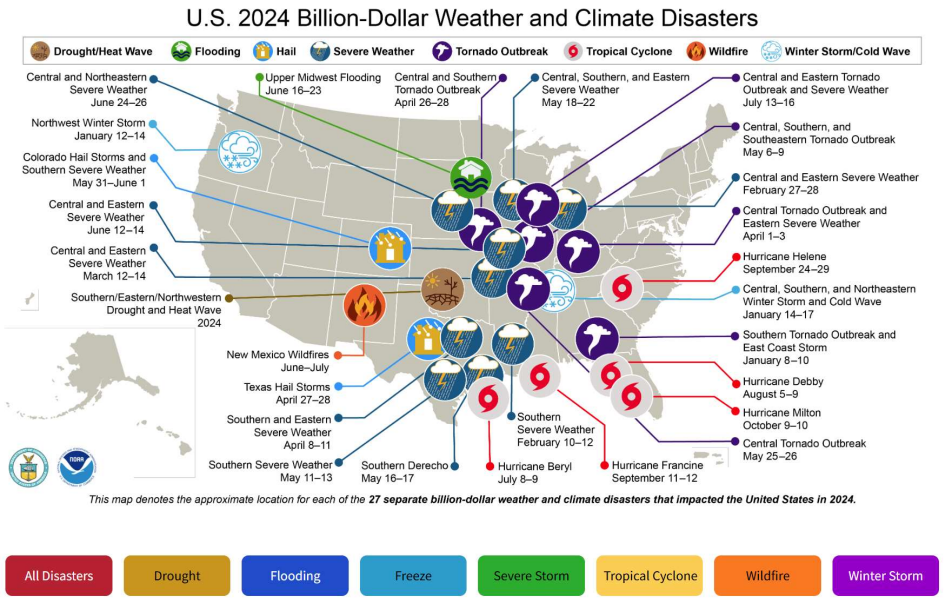
The report found that national residential reconstruction costs, encompassing materials and labor, have climbed by 63.7% over the past 10 years. Between October 2014 and October 2019, residential reconstruction costs increased by 19.8% nationally, with the highest increases recorded in Washington, Nevada, Idaho, Oregon and Kentucky.

3.2.2 Increased cost from catastrophe losses

See U.S. National Centers for Environmental Information

1) $2.915 Trillion: The U.S. has sustained 403 weather and climate disasters since 1980 where overall damages/costs reached or exceeded $1 billion (including CPI adjustment to 2024). The total cost of these 403 events exceeds $2.915 trillion.

(2) 2024 in Summary: In 2024, there were 27 confirmed weather/climate disaster events with losses exceeding $1 billion each to affect the United States. These events included 1 drought event, 1 flooding event, 17 severe storm events, 5 tropical cyclone events, 1 wildfire event, and 2 winter storm events. The 1980–2024 annual average is 9.0 events (CPI-adjusted); the annual average for the most recent 5 years (2020–2024) is 23.0 events (CPI-adjusted).



3.2.3 Increased cost from floods and flood plain development

(1) Development in Special Flood Hazard Areas triggers, among other things, a mandatory flood insurance requirement if the buyer secures financing from a federal related entity. Development in flood plains, however, does not trigger a mandatory flood insurance purchase requirement. Unfortunately, over 2 million acres of floodplain development occurred in US in last two decades.

(2) The safe development paradox of the United States regulatory floodplain

[The author's] posit that the regulatory 100-year floodplain presents a "safe development paradox", whereby attempts to reduce flood risk paradoxically intensifies it by promoting development in and near flood-prone areas. We conducted the first comprehensive national assessment of historical and future development patterns related to the regulatory 100-year floodplain, examining the spatial distribution of developed land within increasingly distant 250-m zones from floodplain boundaries.

(3) Top 10 Most Significant Flood Events By National Flood Insurance Program Payouts (1)

Rank	Date	Event	Number of paid losses	Amount paid ($ millions) when occurred	Amount paid ($ millions) in 2024 dollars	Average paid loss in 2024 dollars
1	Aug. 2005	Hurricane Katrina	168,200	$16,330	$26,247	$156,046
2	Oct. 2012	Superstorm Sandy	132,800	8,967	12,236	92,139
3	Sep. 2017	Hurricane Harvey	77,100	9,015	11,591	150,337
4	Sep. 2022	Hurricane Ian	48,000	4,300	4,555	94,896
5	Sep. 2008	Hurricane Ike	46,900	2,711	3,911	83,390
6	Aug. 2016	Louisiana severe storms and flooding	27,600	2,522	3,305	119,746
7	Sep. 2004	Hurricane Ivan	31,000	1,671	2,778	89,613
8	May 2001	Tropical Storm Allison	30,900	1,110	1,968	63,689
9	Aug. 2011	Hurricane Irene	43,800	1,344	1,873	42,763
10	Sep. 2024	Hurricane Helene	43,700	1,779	1,779	40,709

(1) Defined by the National Flood Insurance Program as an event that produces at least 1,500 paid losses, since 1978. As of January 2025.

(4) And, equally unfortunate: According to a 2023 Survey by the Insurance Information Institute and Munich RE, 22% of homeowners reported that they are at risk of flood. Of those, 78 percent purchased flood insurance—35 percent from a private insurance provider and 43 percent through the National Flood Insurance Program.

3.2.4 Increased cost from severe convective storms

(1) **Severe convective storms** are among the most common, most damaging natural catastrophes in the United States. The result of warm, moist air rising from the earth, they manifest in various ways, depending on atmospheric conditions – from drenching thunderstorms with lightning, to tornadoes, hail, or destructive straight-line winds.

NAIC on severe convective storms

Severe convective storm infographic

(2) **U.S. Tornado Alley moves eastward**

Tornado outbreaks are moving from Texas and Oklahoma toward Tennessee and Kentucky (and further east), where people may not be prepared. Roughly, 1,200 tornadoes strike the U.S. during an average year. They're prevalent in the U.S.—far more so than anywhere else in the world—because its geography sets up the perfect conditions, especially in spring and summer.

3.2.5 U.S. Climate Exacerbated Wildfire Costs

Wildfires represent a growing threat to the health and well-being of communities across the country. The United States has already seen a devastating string of catastrophic wildfires this year in places like Maui, the western United States, and Louisiana as these disasters become more and more damaging due to climate change. This continues a string of deadly wildfire years that make the threat of wildfires to people and the broader economy increasingly clear. The total cost of wildfires in the United States is between $394 billion to $893 billion each year.

3.2.6 The cost of climate change is continuous and it is worldwide

(1) Climate change in the world is showing its claws: The world is getting hotter, resulting in severe hurricanes, thunderstorms and floods.

- Natural disasters 2024 – a loss-heavy year for the insurance market: US $140bn in insured losses – since 1980, only two years have been more expensive
- Weather catastrophes dominant – powerful hurricanes, severe thunderstorms and floods driving the losses
- North America with an even higher proportion of losses than usual – extreme flooding in Europe
- 2024 will replace 2023 as the hottest year to date – temperatures around 1.5°C higher than in the pre-industrial era

(2) Global Catastrophe Recap First Half 2024

The first half (1H) of 2024 saw multiple notable disaster events, which drove total year-to-date economic losses above at least $117 billion. This was lower than the 21st century 1H average of $137 billion and significantly lower than losses in the first half of 2023 ($226 billion). The second quarter was marked not only by multiple costly severe convective storm events in the United States, but also by a number of significant flood events in Germany, Brazil, United Arab Emirates and China. Insured losses in the first half of 2024 are expected to reach at least $58 billion, well above the 21st century average of $39 billion. It is nevertheless lower than in the previous three years, which all saw global losses exceeding $60 billion by the end of June at current price levels. However, outlook for the next six months is marked by heightened expectations of potentially costly hurricane season, as well as continuing convective storm activity in the United States and Europe. By early July, the second named storm of the season, Hurricane Beryl, already resulted in potentially multi-billion-dollar losses.

3.2.7 New Normal: National Academies: Resilience for Compounding and Cascading Events (69, pages,2022) [Bold mine]

Not long ago, disasters would strike one at a time. The disaster would occur, and the disaster relief assembly line would kick into high gear: first responders would help stabilize the local situation, and local community members, people from surrounding areas, and even volunteers from around the nation - second responders - would pitch in to start the recovery process. The disaster would be named and declared, and Congress would pass funding for the next several years. Eventually, the affected communities would reassemble their broken pieces, and America would move on.

Today, there is a **new normal –** most disasters do not occur as isolated events and instead seem to pile on one another, disaster after disaster, often unleashing new devastation on a community before it has had a chance to recover from the prior disaster. Furthermore, acute events can be compounded by chronic deteriorating conditions, such as an acute, intense rain event causing mudslides and flash flooding in an area that had been experiencing extreme drought.

Part Four: California and Hawaii Wildfires – Hazards Beyond Fire Damage

Notes:

- **N1.** The LA Wildfire losses and claims are still being adjusted. What is discussed below undoubtedly will change. Much of the early information deals with aspects of debris removal.
- **N2.** Many of the California wildfire issues discussed in **Part Four** have been experienced in other states such as Colorado. Also, very similar issues have been experienced in Florida with respect to flood losses and claims.
- **N3.** Part Four only will focus on selected aspects of the LA Wildfires as those aspects have appeared early on in addressing the fire damage and remediation.

4.1 Wildfire Perspectives – One Type or Many

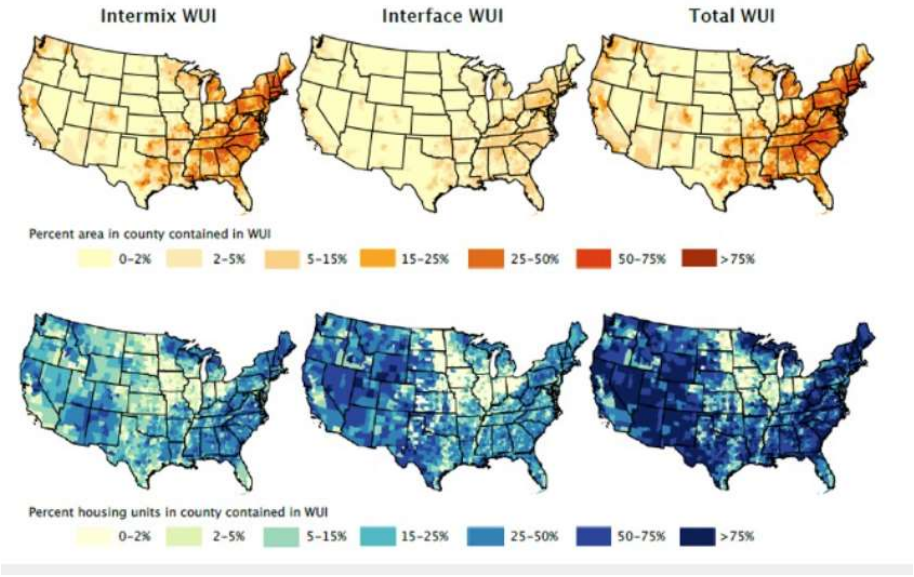
4.1.1 Terminology: The term wildfire often is used willy-nilly and sometimes is confused with just plain fires. There are four possible types of "wildfires/fires."

- wildfires that occur in forested areas with few if any structures (of any type) being destroyed, and there are
- wildfires that occur in the Wildland Urban Interface (**WUI**) and there are
- fires that occur in urban/suburban areas (historically, think the 1871 Chicago Fire) and there are
- fires that are Knocking on our Front Doors: Fires in Urban Forests

(1) These four wildfire distinctions are important because their fire-chemistry can be very different and their fire prevention and building codes can be very different.

(2) National Academies Report on Climate Conversations: Urban Fires

The **WUI** in the continental United States expanded 52% from 1970 to 2000. Researchers project the WUI to grow more than 10% by 2030. Expansion of WUI land areas has been more rapid in the eastern United States than in the West, but the majority of WUI areas in the East are characterized as low-severity fire regimes compared to just 12% in the West.



4.1.2 Wildfire Modeling and LA Fires

(1) A recent report examines how atmospheric changes contributed to January's devastating Southern California wildfires [Reno, Nev. (Feb. 18, 2025)]. While fires engulfed large swaths of Southern California in early January, destroying more than 16,000 structures, taking at least 29 lives, and choking the air with smoke, a new study about weather whiplash was released explaining how the changing climate is creating an atmosphere more prone to extreme weather. Now, [those authors] have released a new report that applies the knowledge gained from January's study to the recent fires, analyzing the broader climatic context that contributed to the unprecedented infernos.

- Increasing Hydroclimatic Whiplash Can Amplify Wildfire Risk in a Warming Climate

(2) Assessing personal risk data in the LA fires

Notes: This is a long article that basically points to *decision making biases* discussed in **#3.1** above and the need for consumers to understand both the benefits of data and the limitations of data. The use of a behavioral risk audit should be considered as a technique to enhance association risk management. See also **#3.2.3** above where flood risks in flood plains are continuously ignored by builders and homebuyers.

4.2 Water and Wildfire in California History

4.2.1 Water/History. Beginning with John Wesley Powell's mapping and exploration of the Colorado River region in the late 1860s, the primary concern of the 10 mainland states in the Great West was water. Alaska and Hawaii had different issues.

(1) According to Mark Twain, as he considered water issues in the Great West, he determined that "whiskey was made for drinking, but water was made for fighting."

(2) Little has changed from Twain's early observation. Water is still an issue in California and in the Colorado River Seven Basis States. Bracing for an ever-growing gap between supply and demand of Colorado River water, three southwestern states unveiled an agreement that would cut California's portion by about 10% in most years. California, Nevada and Arizona submitted their plan to the federal government, which is weighing how to manage the drought-plagued river after 2026, when another historic deal expires. The decision will shape long-term management of a vital water source for 40 million people, including 30 tribal nations and 5.5 million acres of agriculture.

4.2.2 California Wildfires/Fires History

(1) The earliest known wildfire in California history [underline mine] was the Santiago Canyon Fire of 1889. It burned around 300,000 acres in parts of Orange County, San Diego County, and Riverside County. Before 2018, this was the largest wildfire in the state's history in terms of acreage burned. There were no records of any human lives lost during the Santiago Canyon Fire of 1889. However, farmers' crops and thousands of sheep were reportedly destroyed. The wildfire, which was human-made, was preceded by a severe drought coupled with high-speed winds that further dried out the land. The conditions were just right for an intense and destructive fire. California's official fire records, however, do not start until 1932. The most notable fire that took place during this early part of the 20th century was the Matilija Fire, which burned approximately 220,000 acres in Ventura County.

(2) This data reveals that fire seasons are getting longer. During drought years, optimal conditions for wildfires exist year-round. California residents must practice proper fire safety every day and protect their homes from the dangers presented by wildfires throughout the year. Despite the danger, more homes are being built in wildfire-prone areas. Population pressures are putting more people into homes in high-risk burn areas.

(3) CALFIRE for Fire Statistics (Updated)

4.3 LA County Recovers (Home Page)

4.3.1 Home Page

(1) This Home Page demonstrates the effective use of online information (in today's connected society) to keep all parties involved with the LA Wildfires informed and in contact with necessary resources. The Home Page information is important, but some of the links (at the time of this presentation) did not go directly to the subject/title. Nevertheless, all the subject matter links are active on the Home Page.

- Eaton & Palisades Recovery
- Debris Removal [three sections - Forms, Phase I and Phase II]
- Rebuilding [6 detailed sections]
- Resources [6 detailed sections]
- Damage Maps [5 maps]
- Newsroom [3 detailed sections]

4.3.2 Debris Removal

Notes: The reader should study this LA County Recovers information because debris removal is critical in any kind of disaster recovery. The Home Page link on this topic is detailed.

(1) It also should be a reminder that the cost of debris removal in large scale disasters is unlikely to be paid for with commercial insurance and/or personal insurance.

(2) Similarly, the nature of some debris removal may be toxic and require hazmat licenses.

(3) More particularly, the use of lithium-ion batteries in vehicles, personal mobility devices and similar products – all this current use presents serious debris removal issues.

(4) The use of technology on the Home Page means that all the necessary forms can be directly accessed.

4.3.3 More on debris removal and insurance

(1) See Los Angeles Wildfires: A Debris Removal Megaproject

This excellent article raises these questions:

- How far does this material need to go for disposal?
- How will the debris removal affect residents whose houses were not destroyed?
- Will the disposal add to the local transportation gridlock or increase safety concerns for pedestrians in the area?
- Will local officials insist on strict compliance with hazardous waste disposal, which adds time and cost to the cleanup?
- Are there enough local contractors licensed to do this cleanup promptly?

(2) See also this companion article that deals with certain Colorado wildfire losses – with comments applicable to the LA Wildfire debris removal as well.

- Wildfire Recovery: The Critical Role of Debris Removal Coverage

4.3.4 Insurance Coverages

(1) The above article on "Debris Removal Coverage" raises insurance issues.

(2) At this point it time, it is not known what insurance coverage issues might be headed to litigation because of the LA Wildfires. Nevertheless, as in certain past California wildfires, (and in other states) it is likely that public utilities will be cited for negligence. In the past, damage awards against public utilities have been used to fund judgements arising from that bankruptcy litigation.

- California PG&E May 2020 Bankruptcy

(3) Because of turmoil in the California insurance market there could be problems ahead especially if the California FAIR Plan was providing commercial insurance to the association. The FAIR Plan also covered around 22 percent of the structures destroyed in the Palisades Fire and 12 percent of structures destroyed by the Eaton Fire, the other major blaze. In total, the FAIR Plan is looking at a potential exposure of $4.77 billion.

(4) Recent attempts by condominium associations to obtain Business Income coverage for loss assessments from the LA Wildfires were not successful.

(5) Also, recently, the California Insurance Commissioner issued a one-year moratorium on insurance cancellations and non-renewals by zip code.

(6) And very recently, the California Insurance Commissioner approved a 22% increase in State Farm insurance.

4.3.5 Town of Paradise Rebuilding After a Wildfire

Notes: There are several reasons for the gap in years from the wildfire itself in 2018 to the recent restoration development data, see below:

- FEMA Paradise, California: Rebuilding Resilient Homes after the Camp Fire
- Paradise, Calif. burned in 2018. Rebuilding it offers a look at what's ahead for LA

(1) Development timelines: Town of Paradise Rebuilding and Update Statistics as of March 12, 2025

Notes: The November 8, 2018 fire burned for two weeks. The Camp Fire caused 85 fatalities, displaced more than 50,000 people, and destroyed more than 18,000 structures, causing an estimated US $16.5 billion in damage.

Six plus years later see the March 12, 2025 Paradise redevelopment data:

Single-Family Homes in Development:

3,351 Building Permits Application Received
3,204 Building Permits Issued
2,729 Homes Rebuilt (Certificate of occupancy issued)

Multi-Family Homes in Development:

824 Multi-Family Units Applied*
767 Multi-Family Units Issued
650 Multi-Family Units Rebuilt (Certificate of occupancy issued)

**Each "unit" represents a home for a family in Paradise*

Stick – 2,427 (72%) **Manufactured** - 924 (28%)

4.3.6 Ordinance or Law Insurance:

(1) "Generally, Ordinance or Law Insurance coverage provides limited protection for costs associated with repairing, rebuilding, or constructing a structure when physical damage to the structure by a covered cause of loss triggers an ordinance or law."

At this point, there appear to be no coverage problems for Ordinance or Law Insurance. If the property was insured to value, in most situations, this would have included rebuilding according to new building codes even if the damaged LA home was out of compliance.

(2) For those homes that were not insured to value, then Ordinance or Law Insurance may be a coverage problem. See the following data for both California and Hawaii Housing Data showing Age and Year Built (DP04 modified by Treese and Percentages by Treese)

(3) Building codes in California follow a uniform three year cycle. Hawaii adopts a core set of building codes that can be subject to certain variations.

California DPO4			Hawaii DP04	
ACS 2023			ACS 2023	
Housing Occupancy		%	Housing Occupancy	%
Total housing units	14,762,527		572,042	
Occupied housing units	13,699,816		493,898	
Vacant housing units	1,062,711		78,144	
Homeowner vacancy rate	0.7		0.8	
Rental vacancy rate	4.3		8.6	

YEAR STRUCTURE BUILT				
Total housing units	14,762,527		572,042	
Built 2020 or later	280,490	1.90%	8,025	1.40%
Built 2010 to 2019	1,001,207	6.78%	44,372	7.76%
Built 2000 to 2009	1,712,078	11.60%	73,824	12.91%
Built 1990 to 1999	1,447,302	9.80%	71,472	12.49%
Built 1980 to 1989	2,171,729	14.71%	86,116	15.05%
Built 1970 to 1979	2,420,377	16.40%	129,419	22.62%
Built 1960 to 1969	1,820,421	12.33%	77,940	13.62%
Built 1950 to 1959	1,820,981	12.34%	44,387	7.76%
Built 1940 to 1949	782,785	5.30%	16,811	2.94%
Built 1939 or earlier	1,305,157	8.84%	19,676	3.44%
		100.00%		100.00%

(4) **Reserves versus Life Cycle Cost Analysis:** If the damaged LA home was "old" and did not have adequate insurance and had uninsured Ordinance or Law expenses, then reserves and rebuilding might be moot. The LA Home may have outlived its economic life. The LA Home might require a Life Cycle Cost Analysis.

Part Five: Endings/Beginnings – Building a Partnership in Community

5.1 Evolution of the Partnership in Community

5.1.1 **Historically,** the notion of a partnership in community with respect to the risk management of community associations primarily has focused on the relationship of boards of directors with professionals who provide services (attorneys, accountants, CPAs reserve specialists) and with developers in the early stages of the creation of the association.

5.1.2 The **New Normal** (as described earlier) with its ongoing threats of repetitive damage and actual repetitive damage suggests that association risk management should be Enhanced. See the discussion at **#2.3** above. Data-driven solutions may require new sources of data and perhaps new providers of that data especially for physical asset management.

(1) Insurance always will be necessary, but its availability may be limited in form and cost. As mentioned, insurance will be largely outside the control of the association's board. Enhanced risk management can and should be controlled by the board for the benefit of the owners.

(2) In most circumstances, funding for Enhanced Risk Management should be the obligation of the association. Again, in most circumstances, it would not be equitable for all Hawaii non-association entities (and non-association homeowners) to pay for this Enhanced Risk Management.

5.2 Hawaii Enhanced Risk Management : Action / Item / Purpose

Action / Item	Purpose
1. Increase programs like CondoRama that combine State data with data from CAI associations, members, professionals and CAI service providers.	1. Boards age in place, and buildings age in place – board members largely are from white collar backgrounds - they often lack blue collar skill backgrounds. Continuous education is a necessity.
2. Behavioral risk audits by boards of themselves to better understand decision making biases. Role of Heuristics and Biases in Decision-making for Low Probability Events and see **#3.1** above.	2. Boards need to understand their skills and their possible shortcomings.

5.2 Hawaii Enhanced Risk Management : Action / Item / Purpose

Action / Item	Purpose
3. Reserve studies vs Life Cycle Cost Analysis. If older than say 1975 buildings should have the Life Cycle Cost Analysis.	3. Depending on the age of the building(s) and its life expectancy, reserves might be moot hence the LCCA.
4. Insurable Replacement Cost (RCV) is the obligation of the insured. There are professional services for RCV. Determining the cost to bring the association up to code is more challenging.	4. The association must obtain an RCV study from a qualified professional. See the age structure of housing in each state below. The association needs to determine possible Ordinance or Law limits. This is critical for large losses that have not led to the termination of the condominium declaration and dissolutions of the corporation.

5.2 Hawaii Enhanced Risk Management : Action / Item / Purpose

Action / Item	Purpose
5. Sources of data: traditionally this data has been internal data reflective of operations of the association itself.	5. HIREC and CAI Hawaii should consider working with the UHERO Housing Factbook 2024 (and county sources) to include association data and risk management facts.
6. Hawaii has a Statewide GIS Program.	6. HIREC and CAI Hawaii should consider working with this program to capture certain association risk management data &/or story maps so that data-driven solutions are improved.
7. Nearly 300 Honolulu Highrises in 2022 failed to meet life safety standards. Allowing this lapse to continue to the next "Marco Polo" is not acceptable.	7. For those condominiums out of compliance, consideration should be given to state funding of life safety requirements out of resale contributions.

Part Six: Selected Resources

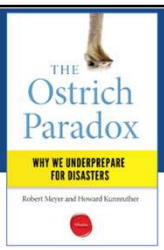
- CAI California – 8 Chapters and Legislative Action Committee
- Living in a California Common Interest Development
- Foundation for Community Association Research Fact Book

- Hawaii DCCA Condominium Registration and Education
- State of Hawaii Data Book
- University of Hawaii Housing Factbook 2024
- CAI Hawaii Resource Center

ISSUE BRIEF

May 2018

Wharton University of Pennsylvania | Risk Management and Decision Processes Center



The Ostrich Paradox: Why We Underprepare for Disasters[1]

We fail to evacuate when advised to do so. We rebuild in hazard-prone areas after experiencing a disaster. We don't wear helmets when riding motorcycles. We often purchase insurance only after experiencing a disaster and then cancel our policy a few years later if we haven't made a claim. We would rather avoid the risk of "crying wolf" than sound an alarm.

What can we do to encourage people to take steps now to reduce future losses? In our book *The Ostrich Paradox*, we characterize six decision-making biases that cause individuals, communities and organizations to underinvest in protection against low-probability, high-consequence events. We then propose a behavioral risk audit that recognizes that these biases are difficult to overcome but that they can be used to develop strategies to improve individuals' decision making processes in preparing for disasters before they occur.

SIX DECISION-MAKING BIASES

Research in cognitive psychology and behavioral economics suggest that most disaster preparedness errors can be traced to the effects of the following six decision-making biases:

- Myopia – a tendency to focus on overly short future time horizons when appraising immediate costs and the potential benefits of protective investments.
- Amnesia – a tendency to forget too quickly the lessons of past disasters.
- Optimism – a tendency to underestimate the likelihood that losses will occur from future hazards.
- Inertia – a tendency to maintain the status quo or adopt a default option when there is uncertainty about the potential benefits of investing in alternative protective measures.
- Simplification – a tendency to selectively attend to only a subset of the relevant facts to consider when making choices involving risk.
- Herding – a tendency to base choices on the observed actions of others.

KEY FINDINGS

- Our ability to protect ourselves against the consequences of natural catastrophes has never been greater, yet, we often fail to do so.
- Research in cognitive psychology and behavioral economics suggests that most errors in disaster preparedness are caused by biases in decision-making under uncertainty.
- There is an opportunity to improve preparedness by recognizing these biases and designing strategies that deal with them.
- We propose a behavioral risk audit that couples protective decision-making with economic incentives to encourage individuals to undertake preparedness measures.
- Examples of such strategies include: stretching the time horizon when presenting the likelihood of disasters; short-term financial incentives; use of default options; multi-year insurance contracts; and seals of approval.
- In dealing with societal problems, such as those posed by climate change, there is need to embrace guiding principles that make long-term preparedness a top priority for public sector planners at the local, state and national levels.

NEED FOR RISK PREPAREDNESS

When individuals are unsure how best to prepare for a disaster, they often choose the option that requires the least amount of mental effort. For example, indivduals who purchase insurance often choose the lowest deductible (highest premium) to maximize the chance of getting a return from their policy. Following a hurricane warning they may decide to remain in their home rather than evacuating in the hope or belief that the storm will not impact their community. Unfortunately, these choices often do not reflect a systematic analysis of the data, and in some cases can lead to tragic consequences.

A BEHAVIORAL RISK AUDIT

We propose a behavioral audit that recognizes the decision-making biases and uses framing techniches coupled with economic incentives in ways that lead individuals to consider preparedness measures for disasters.

The tendency to look for easy ways out can be flipped on its head by making preparedness for disaster something one needs to actively *opt out of* rather than choosing to *opt into*. As an example, one might overcome the hesitancy of people in flood-prone areas to buy flood insurance by providing it as part of a homeowners policy. People who actively prefer not to have it could opt out of this coverage and obtain a refund of their premium.

The behavioral risk audit is a new approach to preparedness planning founded in behavioral economics and psychology. Utilizing this systematic framework to identify the decision biases at play can help us design more effective strategies and enact policies that work *with*, rather than *against*, our natural tendencies to not think about adverse events that we perceive as having a low probability of occurrence. The behavioral risk audit can be used as a source of guidance not just for individuals and households but for communities and government at the local, state and national levels.

The outcome of the behavioral risk audit will be a problem-solution matrix that provides planners with an explanation of the biases that can lead to distorted perceptions of risk, how misperceptions may be manifested in preparedness errors, and possible remedies.

KEY FINDINGS

Errors in disaster preparedness can be traced to six cognitive biases relating to decision-making under uncertainty:

- Myopia – a tendency to focus on overly short future time horizons when appraising immediate costs and the potential benefits of protective investments.
- Amnesia – a tendency to forget too quickly the lessons of past disasters.
- Optimism – a tendency to underestimate the likelihood that losses will occur from future hazards.
- Inertia – a tendency to maintain the status quo or adopt a default option when there is uncertainty about the potential benefits of investing in alternative protective measures.
- Simplification – a tendency to selectively attend to only a subset of the relevant facts to consider when making choices involving risk.
- Herding – a tendency to base choices on the observed actions of others.

BEHAVIORAL RISK AUDIT MATRIX

Bias	Impact on Beliefs	Manifestation	Remedy
***Myopia*: a tendency to plan over short future horizons**	Focus on short-term horizons in evaluating flood loss mitigation options	Failure to invest in cost-effective measures due to high upfront costs	Couple long-term loans with insurance premium reductions to spread the upfront cost over time.
***Amnesia*: a tendency to base decisions on recent experiences**	Fading memory of past floods and resulting damage	Failure to renew annual flood insurance policy	Automatically renew multiyear policies with constant annual premiums.
***Optimism*: a tendency to underestimate the likelihood of personal harm**	Underestimation of the probability of a flood	Tendency to see flood insurance and mitigation as overly expensive relative to benefits	Stretch time horizon so individual perceives the probability of a disaster to be closer to the scientific estimate.
***Inertia*: a tendency to choose the status quo**	A preference for the status quo in protective investments; for floods, doing nothing	Reluctance to purchase insurance or invest in loss-reduction measures (e.g., storm shutters); procrastination in decision making	Make protection the default; make insurance a condition for obtaining a mortgage, or part of a bundled policy the resident can opt out of.
***Simplification:* a tendency to pay attention to only a few relevant factors**	Limited consideration of information available about flood risk	Ignorance of the flood risk of a location; lack of knowledge of possible remedies	Implement communication programs that make it easier for residents to understand their flood risk, providing examples of the consequences of a flood.
***Herding*: a tendency to make decisions by basing choices on the observed actions of others**	Tendency to base insurance decision on whether friends and neighbors have flood policies	Low rates of take-up at the community level	Implement communication programs that emphasize social norms of safety; offer seals of approval that enhance the social status of protective investments.

For dealing with long-term risks such as those posed by climate change, public sector planners at the local, state and national levels also need to embrace the following guiding principles:

- ***Principle 1:*** *Commit to long-term protective planning as a top priority.*
- ***Principle 2:*** *Discourage individual and community actions that increase exposure to long-term risks.*
- ***Principle 3:*** *Consider the cognitive biases that inhibit adoption of protective measures.*
- ***Principle 4:*** *Address problems equitably.*

OVERCOMING BIASES

Below are several ways to incentivize those at risk to take action now rather than waiting for a disaster to occur:

- ***Stretch time horizons***: Instead of indicating that the likelihood of a severe hurricane next year is 1-in-100, experts could reframe their estimate as a greater than 1-in-4 chance that there will be at least one such hurricane in the next 25 years. This is the same probability presented over a longer time period assuming that hurricanes are equally likely to occur each year. This reframing may help overcome the myopia and optimism biases.
- ***Short-term incentives***: Provide a loan to property owners that spreads the cost of a loss reduction measure over time. If the measure is cost-effective and insurance premiums reflect risk, then the annual cost of the loan will be less than the savings in insurance costs for the safer structure. Tying the loan and insurance to the property and/or to the mortgage rather than the individual will address the amnesia bias, as the safety measures in place is a constant reminder that one may experience a disaster in the future.
- ***Use of default options***: Insurance premiums could be automatically included in a homeowner's mortgage or taxes. Individuals would be able to opt-out if they did not want the coverage; however, the need to exert time and energy to cancel a policy is likely to lead them to keep insurance due to the inertia bias.
- ***Multi-year insurance contracts***: Insurers could consider offering homeowners multi-year insurance policies, thus freeing them from the need to make an annual decision about renewal. For example, flood policies could be written for three- to five-year terms with an annual premium that would remain stable for the length of the contract. Such an insurance policy would address the simplification bias. Rather than property owners having to deliberate each year about whether they should renew their insurance or worry about whether they would be covered should a flood occur, their policy would be automatically renewed for the length of the contract.
- ***Seals of approval***: The most cost-effective means of making communities safer from hazards may be through social norms that directly address the herding bias. If residents in hazard-prone areas observe that all of their neighbors are making investments in loss prevention measures and buying insurance they are likely to follow suit. The Institute for Home Building and Safety has awarded seals of approval to homes that meet or exceed building code standards. The hope is that such marks of excellence would not only increase the property value of the home, but also nudge others to undertake improvements.

Mahalo and Aloha

Thank you to our speakers and to everyone who joined us today.

2025 Calendar of Events

February*: "Meetings, Meetings, and More Meetings, Oh My" – Kanani Kaopua & Nikki Loh

March 6*: "Major Project Management" – Sue Savio & Bernie Briones

April 19*: "Condorama XIV" – Milton Motooka & Wes Brum

May 29*: "Where's the Money – Association Funding" – Anne Anderson & Melanie Oyama

June 14, 21*: "Board Leadership Development" – Keven Whalen & Melanie Oyama

July 17: Legislative Action Committee – "2025 Legislative Update" – Phil Nerney

August 21: "Mixed Plate" – Nikki Sen & Stephanie Poree

September 25: "Owner Rights, Board Rights, and Association Rights" – Chris Goodwin & Sue Savio

October 23: "EV, Fires, and Sprinklers" - Bernie Briones

November 7: Annual Meeting

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