

2025

State of Flood

Report



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The law of attraction states that whatever you focus on, think about, read about, and talk about intensely, you're going to attract more of into your life."

JACK CANFIELD
Author



Avenues of attraction



With innovation and collaboration, we will attract more stakeholders to close the flood insurance gap.

Flood remains one of the most frequent and severe perils worldwide, claiming lives and inflicting lasting damage from which communities often take years to recover. Flood presents a dual challenge: first, nearly every community is susceptible to flooding, meaning that, eventually, this disaster will affect us all. Second, there exists a persistent and growing gap in funding flood losses through insurance. Closing this gap is essential for accelerating recovery, alleviating suffering, and enhancing flood resilience.

It is imperative that we unite in our efforts to attract new stakeholders to close the flood insurance gap. If ever there was a widespread problem that society could solve through unified effort, it would be flood.

Financial protection for flood has been available in the United States for almost 60 years through the National Flood Insurance Program (NFIP). Businesses have been able to access greater amounts of flood coverage through private insurance. In other developed nations, a patchwork of government- and private sector-funded flood programs provides limited protection. Underutilization of flood insurance from any funding source is the main reason for the coverage gap.

A stark reminder of this gap is the devastation left in the wake of Hurricane Helene, which struck Florida, Georgia, the Carolinas, Tennessee, and Virginia in September 2024. In addition to claiming more than 230 lives, Helene caused catastrophic flooding in inland areas where less than 1% of properties had flood insurance, according to an analysis of NFIP data.

The lack of flood insurance as well as underinsurance — that is, flood coverage limits that are below expected losses — is a nationwide problem that exists within and outside NFIP flood zones, according to the Federal Reserve Bank of Philadelphia in a December 2024 working

paper, *Flood Underinsurance*. The working paper calculates 70% of expected flood losses for US single-family residences will remain uninsured annually unless owners align their flood insurance with their exposure.

In the wake of the catastrophic fires that ravaged Southern California, the landscape has been irrevocably altered, leaving communities more vulnerable to the looming threat of flooding as the rains return. With charred earth unable to absorb water, the risk of devastating flash floods is heightened, making flood insurance not just a precaution, but a lifeline for families striving to rebuild their lives amidst the uncertainty.

The great challenge before us is how to attract more uninsured property owners to use flood insurance solutions. A main goal of the 2025 State of Flood Report is to explore that challenge in depth. In this report, we discuss the increasing rise in flood risk, how it can be reduced, the urgency of resilience efforts, the role of insurance in recovery, and how to close the flood insurance gap through innovative solutions. We offer recommendations to policymakers, communities, and other stakeholders.

At Torrent and Marsh McLennan, we are dedicated to addressing risks through public/private innovation and collaboration. We take action to develop avenues to attract new stakeholders to flood insurance. We invite all readers of this report to join us in our mission to enhance and sustain flood resilience.

A handwritten signature in black ink that reads "Kevin Tobin".

Kevin Tobin
President and CEO, Torrent Technologies



Executive overview

The 2025 State of Flood Report addresses the escalating need for flood insurance across the United States, driven by an increase in flooding events, even in areas previously considered low risk. This report serves as a vital resource for stakeholders in the flood risk management community, including policymakers, consumers, insurance carriers, agents, and government entities, highlighting the opportunities to close the flood insurance gap and bolster community resilience.

Introduction

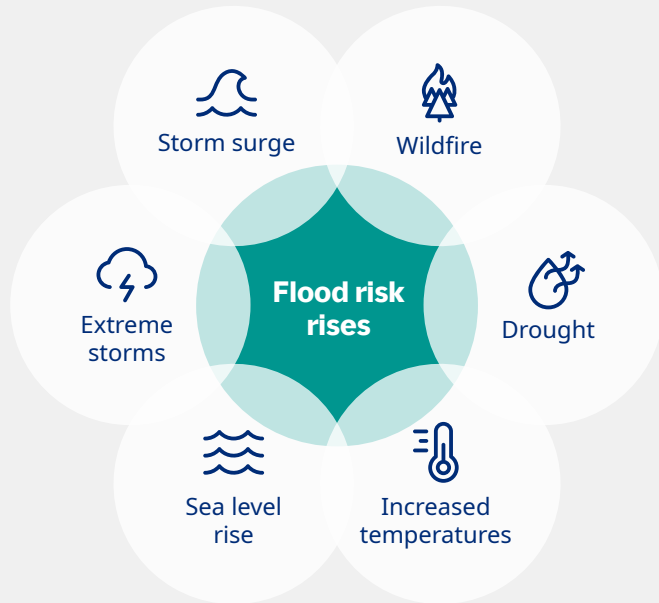
Flooding is a critical concern nationwide, with more properties at risk than ever before. The report outlines the significant role that private flood insurance can play in mitigating these risks and providing peace of mind to property owners. As the industry leaders, Torrent and Marsh McLennan are at the forefront of this movement, advocating for innovative solutions that cater to the diverse needs of stakeholders.

Purpose of the report

The primary purpose of the 2025 State of Flood report is to highlight the increasing need for flood insurance and to present actionable strategies for attracting new stakeholders. With a focus on the growing number of uninsured properties and the financial toll flooding takes on these households and businesses, the report emphasizes the importance of making flood insurance more accessible and appealing. It also highlights the need for education and collaboration between private and public sectors to address misconceptions about flood coverage and to promote the benefits of insurance as a risk management tool.



01| Natural catastrophes feeding flood



Key findings and recommendations

The report identifies several key findings:

- 1. Increased flooding in lower-risk areas:** There is a notable rise in flooding incidents in regions where flood insurance is not typically required by lenders and flood insurance policies are often minimal. This underscores the need for broader coverage options. Flood maps are used by lenders to determine if flood insurance is required on a property and may not reflect evolving flood risk.
- 2. Private insurance solutions:** The report advocates for the development of private, easy-to-add options for businesses' and homeowners' insurance quotes, which can attract new stakeholders and address the existing insurance gap.
- 3. Education and collaboration:** The report emphasizes the importance of educating stakeholders about measures that can be taken to reduce risks/increase resilience, the value of insurance, and joint public/private coalitions to enhance the availability of innovative insurance solutions.
- 4. Affordability and accessibility:** As property insurance costs rise in the wake of an increasing number of costly natural catastrophe events, concerns about maintaining affordable flood insurance are growing. The report recommends offering more affordable and diverse options outside the traditional NFIP.

Calls to action

To effectively attract new stakeholders, the report outlines several strategic actions:

- 1. Build flood resilience:** As we confront the escalating threat of flooding, it is imperative we adopt [a proactive response to flood resilience](#) combined with a [holistic risk approach](#). This means preparing our communities and ensuring that recovery efforts are swift and effective when disasters strike.
 - Recovery: A critical component of this recovery is flood insurance, which serves as a vital safety net. Currently, an alarming [~95% of single-family homes in the US](#) lack adequate flood insurance protection, leaving millions vulnerable to financial devastation in the wake of a flood.
 - Empower and safeguard: We must prioritize closing this gap by promoting awareness and accessibility of flood insurance options. By doing so, we can empower people, businesses, and entire communities to ensure that recovery is not just a hope but a reality.
- 2. Innovative product offerings:** Develop attractive, consumer-centric flood insurance products that are easy to understand and purchase.
- 3. Public engagement:** Collaborate with and educate government agencies, such as the Federal Emergency Management Agency (FEMA), along with state/local officials, to advocate for initiatives that reduce barriers to flood insurance access and affordability.

The 2025 State of Flood Report emphasizes the urgent action to ensure all Americans have access to the flood protection they need.



2024 year in review

Extreme rainfall is a prime cause of flooding worldwide.

Rising temperatures contribute to flood risk in several ways. These include increasing evaporation, intensified tropical storms, and weather patterns that carry more moisture, as well as droughts that heighten wildfire risks and reduce soil absorption. When heavy rain falls on dry, bare ground, the likelihood of flash flooding and mudflows significantly increases.

Pluvial flooding, caused by heavy rains, is becoming more frequent and intense, along with flash floods and urban flooding. These extreme rains are often outside traditional high risk flood areas and further establishes the unpredictable nature of flooding. [First Street](#) estimates 1.7 million more US properties in coastal and low-lying areas will be at risk as environmental trends continue.

Severe flooding occurred all over the world during 2024, claiming thousands of lives and forcing [millions](#) to evacuate. Examples of significant flood events in 2024 include:

- **Americas:** [Argentina, Brazil, and Uruguay](#) all experienced catastrophic flooding after record or near-record rainfall.
- **Europe:** [Central and Eastern Europe](#) had disastrous flooding in September, while heavy spring rains resulted in hundreds of deaths across western Europe.
- **Asia:** [Malaysia and Thailand](#) experienced in November some of their worst flooding in several decades, following episodes of excess rainfall. [Indonesia](#) faced flooding and landslides.

[2024 World Under Water](#) visually depicts the toll of 2024's flood events on humanity. Grimy, muddy flood waters mixed with people fighting to recover are the subjects of this heart-breaking photo essay.

In the United States, through November 2024, floods caused at least 166 direct fatalities in 24 states — more than double the number a year earlier, and the highest since 2015 — according to the [National Weather Service](#).

Flood events occurred throughout the year, prompting a record [66 federal flood disaster declarations](#), according to The New York Times. In January, record rain in Southern California caused flash floods, while Hurricanes Debby, Helene, and Milton caused deadly flooding across Southeastern states in September.

Hurricane Helene struck Florida, Georgia, the Carolinas, Tennessee, and Virginia. In addition to claiming more than 230 lives, Helene caused catastrophic flooding in inland areas where less than [1% of properties had flood insurance](#), according to an analysis of NFIP data.

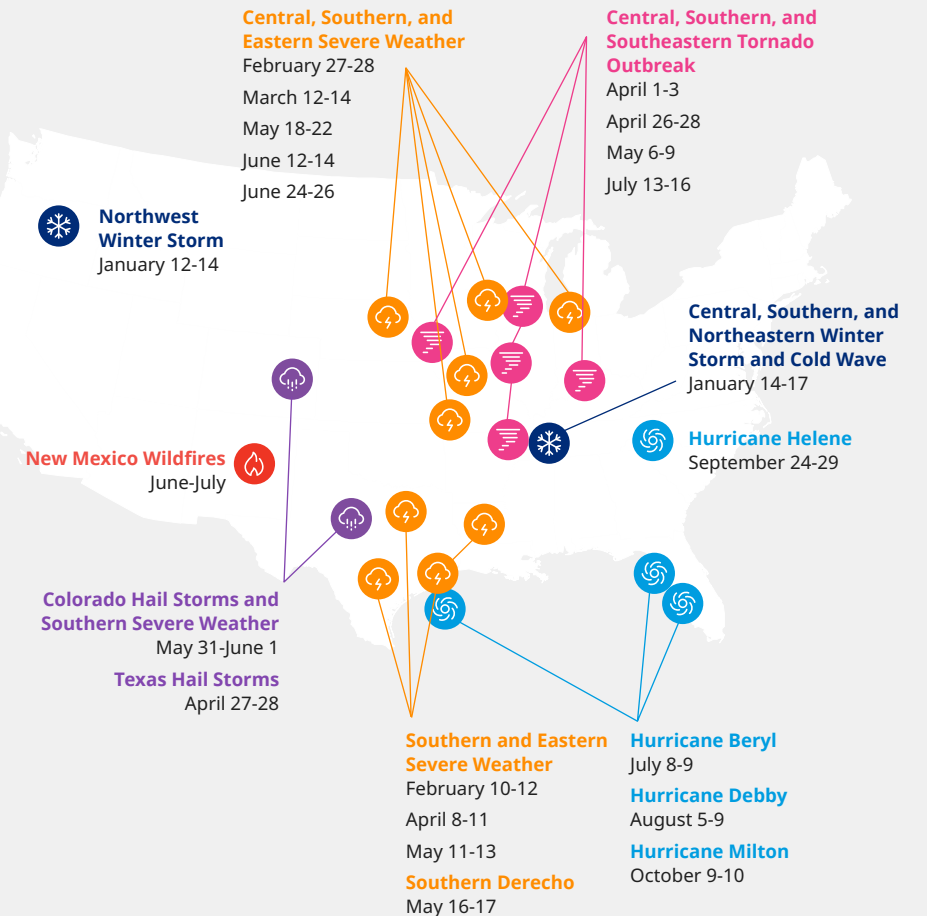
In 2024, the NFIP paid more than 56,000 flood claims totaling more than \$1.4 billion. Much of this amount came from Hurricane Helene, which generated flood claims in six states. For comparison, in 2023 the NFIP paid nearly 16,400 flood claims totaling \$968 million.

2025 year ahead

Early in 2025, California grappled with significant flooding events driven by a series of atmospheric rivers, particularly impacting areas previously affected by wildfires in Southern California. Meanwhile, Pike County, [Kentucky](#) experienced devastating and tragic flooding.

[La Niña](#) conditions persist but are expected to transition to neutral by March to May. Despite the ocean conditions being weak, the atmospheric components remain strong, indicating a complex interplay that could influence upcoming climate patterns, including precipitation and temperature forecasts. This divergence in precipitation patterns underscores the necessity for communities to prepare for the heightened risk of flooding, particularly in areas that may experience sudden and intense rainfall following prolonged dry spells.

02| US 2024 billion-dollar weather and climate disasters



The rising tide of flood risk

NOAA projects [high-tide flooding](#) will increase substantially in coming decades as sea levels rise. Such flooding is the overflow or accumulation of water on normally dry land due to tidal activity, and it can occur even on sunny days. These events may cause road closures, overwhelm drainage systems, and eventually degrade subterranean infrastructure, according to NOAA.

The impact of high-tide flooding differs widely in coastal areas of the United States. For example, Virginia Key, Florida, adjacent to Miami, experienced four high-tide flooding days in 2024. By 2050, that location will see at least 20 such days each year under a low-range NOAA projection. Galveston, Texas, had 11 high-tide flooding days in 2024, and NOAA forecasts it will see at least 120 such days by 2050.

Global Risks Report 2025

The [Global Risks Report](#) for 2025 highlights environmental risks — including natural disasters and extreme weather events such as floods — as some of the most severe short- and long-term threats we face that require solutions urgently. In its national-level [Executive Opinion Survey](#), US business professionals considered extreme weather events a top five risk over the next two years. Extreme weather events also ranked as a top five risk among G20 countries in this survey.

Underinsurance

A lack of flood insurance and pervasive underinsurance — coverage that does not match the average annual loss exposure from flood — are problems, according to an analysis by the Federal Reserve Bank of Philadelphia. In a [December 2024 working paper](#), the bank calculated that 70% of expected flood losses annually will remain uninsured, unless property owners take steps to align their exposure with *Flood Underinsurance*.

03| Global risks ranked by severity over the short and long term

Please estimate the likely impact (severity) of the following risks over a 2-year old and 10-year old period



- Environmental
- Geopolitical
- Societal
- Technological

Source
World Economic Forum Global Risks Perception Survey 2024-2025

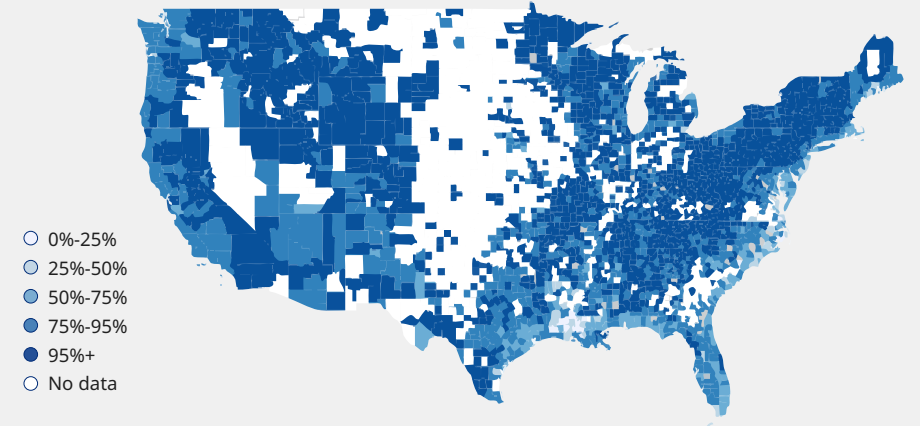
Flood insurance is part of the bigger picture in the path to resilience.

Flood insurance innovation is connected to a bigger picture — making communities and individuals safer and better prepared. Current trends in climate change and economic development suggest the frequency and severity of floods will continue to rise unless society takes steps to bend the curve and close the protection gap.

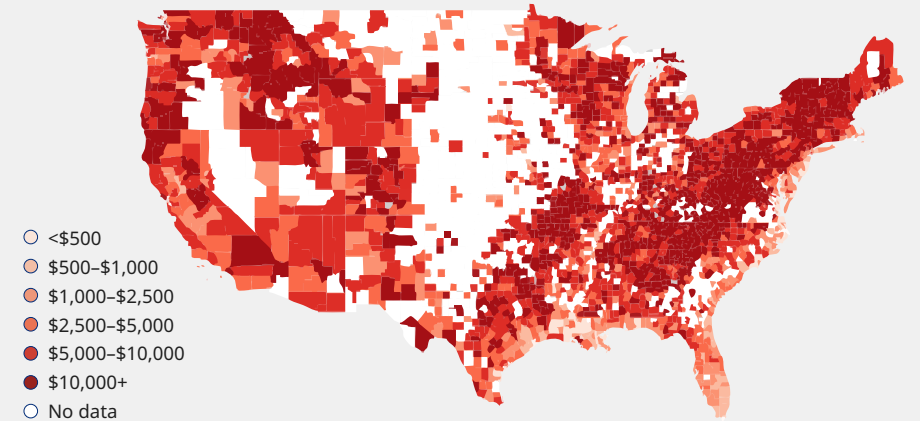
The goal in mitigating flood risk should be to increase flood resilience. Resilience is the ability to absorb, recover from, and adapt to adverse events.

The goal is clear: to close the flood insurance gap and enhance resilience for communities, businesses, and individuals alike. Flood insurance is not just a financial product; it is a vital tool for recovery and rebuilding after disasters.

04| Percent underinsured by county



05| Expected underinsurance by county



Maps courtesy of Amornsiripanitch, N., S. Biswas, J. Orellana-Li, and D. Zink (2024). [Flood Underinsurance](#). Working Paper 24-23, Federal Reserve Bank of Philadelphia. DOI: 10.21799/frbp.wp.2024.23

*Negative values of underinsurance are set to zero. Statistics are derived from the sample of positive flood risk single family residences (SFRs) for which purchasing full coverage of flood insurance is optimal. We assume full coverage is optimal for an SFR if the annual premium is less than or equal to average annual losses (AALs). The map sample includes 2,222 counties that have at least 20 properties facing positive current AAL and optimal demand for full coverage. Counties with insufficient data are colored in gray.



In the United States, FEMA leads the federal government's [response and recovery](#) efforts when a disaster is declared. Recovery actions are guided by the National Disaster Recovery Framework and focus on restoring, redeveloping, and revitalizing impacted communities. The NFIP facilitates recovery from flood events, but its impact is limited by the low uptake of insurance outside of lender required Special Flood Hazard Areas (SFHAs). Attracting new policyholders to the NFIP and private flood insurance is paramount in improving flood resilience and recovery.

Insurance for faster recovery

Insurance can play a useful role in recovery following floods and other disasters, as a source of risk financing as well as an economic incentive to invest in loss mitigation.

As Carolyn Kousky, of the Wharton Risk Management and Decision Processes Center at the University of Pennsylvania, noted in the Annual Review of Resource Economics: Insurance “can provide financial protection to insureds, preventing negative economic hardship after a disaster. It can speed rebuilding and recovery by providing post-disaster funding and liquidity soon after the event. Insurance could help promote risk reduction before a disaster through financial incentives or after an event through extra funding for hazard mitigation as part of rebuilding efforts. Insurance can only deliver on these benefits, however, in a broader landscape of risk management, supported by governments and other stakeholders. An understanding of the hazard risks and exposure, as well as an appreciation of the role of insurance, are all needed to realize this potential.”

Achieving flood resilience calls for public/private sector collaboration to enhance risk management through a risk culture that balances fairness and personal accountability, transforming land use and infrastructure planning, mobilizing capital for flood resilience, and shifting to a resilience-focused insurance system.

Two keys to flood resilience are hazard mitigation and recovery. The National Institute of Building Sciences (NIBS) estimates natural-hazard mitigation can save society an average of [\\$6 for each \\$1 invested](#). NIBS notes, however, that the costs and benefits are not shared equally by building owners and beneficiaries, creating disincentives for investments in mitigation. Public/private coordination is needed to incentivize resilience, according to NIBS.

NIBS' [Resilience Incentivization Roadmap 2.0](#) proposes financial incentives for mitigating flood hazards that include:

- **New home construction:** Communities with heightened flood risk can receive reduced development impact fees by including resilience investments in new homes.
- **Retrofitting:** Government-sponsored enterprises can buy home equity loan portfolios that fund resilience in existing homes.
- **Overall:** Governments can issue tax incentives for resilience investments.

The US Chamber of Commerce and Allstate found an additional \$7 in economic costs saved for every \$1 invested in resilience in its [The Preparedness Payoff](#) report, bringing the total to 13:1.



In-Focus: Florida's building code strategy for resilience

Florida has implemented some of the toughest building codes in the United States, particularly in response to the devastation caused by hurricanes. These codes are designed to enhance the resilience and safety of homes and buildings against hurricane damage.

- 1. Historical context:** The impetus for [Florida's stringent building codes](#) can be traced back to Hurricane Andrew in 1992, which caused extensive destruction. In the aftermath, state officials mandated significant revisions to building codes to mitigate future damage from storms.
- 2. Key features:**
 - Hurricane-resilient upgrades: Recent [updates to the building codes](#) include streamlined permitting processes for windows, doors, and garage doors.
 - Elevating buildings and structures for floodwaters: [Building codes](#) require buildings and structures in coastal high hazard areas and Coastal A Zones be elevated.
 - Condominium and HOA regulations: [New legislation](#) introduced requirements for homeowners' associations (HOAs) to enhance hurricane protections, ensuring that all adopted specifications comply with the applicable building codes.

- 3. Impact of building codes:** The rigorous building codes have been credited with significantly [mitigating damage](#) from hurricanes. They require that new construction be built to withstand high winds, floodwaters, and other storm-related stresses, which has helped protect homes and reduce the overall impact of hurricanes on communities.
- 4. Challenges for residents:** While building codes provide a framework for resilience, some residents face challenges when rebuilding after a hurricane. The regulations can be costly and complicate the rebuilding process, particularly for older structures that may need to be brought up to current standards.

In response to the lessons learned from Hurricane Ian, the [Rebuild Florida Housing Repair and Replacement Program](#) — a collaboration between FloridaCommerce and the US Department of Housing and Urban Development — has been established to support long-term recovery efforts for low- to moderate-income families affected by the hurricane, enhancing their resilience against future disasters. This program may also assist eligible Floridians impacted by Helene and Milton. Furthermore, several communities require all permitted developments to undergo a thorough floodplain review, ensuring that future construction is better equipped to withstand the impacts of severe weather events.



Prime time for private

The expanding opportunity for private flood insurance

As flood risk escalates, the need for private flood insurance is unprecedented and expected to grow significantly. Advances in risk assessment and data analytics are making flood peril increasingly predictable, revealing that many properties — especially those outside FEMA flood zones — are at greater risk than previously understood.

It is already common knowledge that hurricanes and tropical storms inflict damage far inland, including record amounts of rain that contribute to flooding. What is becoming clearer is how much damage is occurring outside of FEMA flood zones, and the data show flood risk is rising in locations where people previously did not expect to see it.



Hurricane Debby is a prime example from 2024. Debby strengthened into a Category 1 hurricane on August 4 and made landfall near Steinhatchee, Florida, the next day. The hurricane crossed northern Florida and southern Georgia before returning to the Atlantic and making a second landfall in South Carolina and then wound its way northward into eastern Canada. Along the way, Debby brought torrential rain, flash floods, and river flooding, according to [National Oceanic and Atmospheric Administration](#) (NOAA) data.

An analysis of Hurricane Debby by [First Street](#) found the majority — 78% — of flood-damaged properties were outside of FEMA flood zones. Total damage from Debby exceeded \$12.3 billion, and \$9.7 billion in damage occurred outside flood zones. First Street said its comparison of probabilistic flood hazards with flood reports by media and homeowners aligned, showing accurate forecasting of actual flood damage.

Hurricane Helene provides further illustration of the need for awareness and action on flood risk, particularly inland. Across seven states, only [0.8% of homes in inland counties](#) that Helene flooded had flood insurance, according to The Washington Post. By comparison, 21% of homes in coastal counties in those same states had flood insurance.

Hurricane Helene: A stark wake-up call for flood risk awareness and action — less than 1% of homes in affected inland counties had flood insurance!

Asheville, North Carolina, was devastated by flooding brought on by Helene's heavy rains. Asheville is the seat of Buncombe County, in which less than 1% of homeowners had flood insurance when Helene struck. Tourism made up about 20% of [Asheville's economy](#), and city officials estimate local businesses will lose nearly \$600 million in revenue from visitors in first-quarter 2025, CNN reported.

As risk models evolve and public awareness grows, the private flood insurance sector stands poised for substantial expansion, enhancing resilience for communities, businesses, and individuals alike. The time to act is now.



Attract more new stakeholders

To effectively draw new stakeholders into the flood insurance marketplace, we must address the misconceptions and barriers that currently deter them from purchasing coverage.

Many consumers mistakenly believe they are protected under their homeowners or renters insurance policies, unaware that flood perils have been excluded for nearly a century. NFIP was established in 1968 precisely because of the absence of private flood insurance options.

Key reasons for the low uptake of flood insurance include:

- **Underestimated need due to mandated requirements:** While federal mortgage lenders mandate flood insurance for properties in SFHAs, there are no such requirements for properties outside these zones, leading many to underestimate their need for coverage.
- **Perceived cost:** Many property owners view flood insurance as an unnecessary expense, failing to recognize that not having coverage exposes them to significantly higher financial risks.

The Federal National Mortgage Association, known as Fannie Mae, has published several surveys on [consumer awareness of flood risk and insurance](#). Fannie Mae's most recent version, released in 2022, found low overall awareness of flood risk, especially in high-risk zones, and poor awareness of flood insurance. Among Fannie Mae's findings:

- Only 27% of respondents were aware they had flood insurance.
- 21% thought they had flood insurance.
- 52% knew they did not have flood insurance.



The percentages of respondents who did not have flood insurance were higher in medium-risk (61%) and adjacent flood zones (59%). Fannie Mae used the following zone definitions:

- High risk as SFHAs associated with FEMA flood zones A or V.
- Medium risk as zones B or X, or modeled depth of greater than 1 foot at 1% annual probability.
- Adjacent as less than 1,500 feet from a body of water and the point elevation is less than 30 feet.

According to Fannie Mae, 53% of respondents who had flood insurance were insured under the NFIP, 30% had private flood coverage, only 4% had both NFIP and private flood insurance, and 13% did not know or were not sure whether they had NFIP or private coverage.

Notably, the study found flood risk was a main motivation for respondents who purchased flood coverage. Forty-six percent of respondents cited their property location, past experience with severe weather or flood, and risk of flooding as reasons they bought coverage. The next highest motivation, cited by 37%, was required or mandated flood insurance, followed by: safety/precautionary measures, 15%; recommendation by their insurance agent, 3%; and low cost, 2%.

The survey also revealed a significant misunderstanding of flood zone designations. While 86% of respondents in high-risk zones believed they knew their status, only 43% accurately identified themselves as being in FEMA-defined flood plains. Surprisingly, 13% did not think they were near any flood zone, while 30% believed they lived near a flood zone. Even higher percentages of respondents in medium-risk (43%) and adjacent zones (36%) believed they were not near any flood zone.

To attract more stakeholders, we must enhance consumer awareness of flood risks and insurance options. Strategies should include educating about flood risk and the solutions to mitigate that risk, expanding attractive coverage options that complement the NFIP, and actively engaging policymakers to eliminate barriers to innovative flood protection solutions.

06 | Flood insurance scenarios for homeowners

Flood insurance	Potential outcome	Opportunity
Young homeowner, in early years of mortgage		
None, not required by lender	Even a few inches of floodwater can cause thousands of dollars in damage. Homeowner may lack resources to fully repair damage or to temporarily relocate.	Affordable private flood insurance solution for lower risk areas FloodProtect
Middle-aged homeowner, mortgage middle of or near maturity, potentially considering selling home to accommodate growing household or empty nest		
NFIP building and contents policy	Appreciation of property value may far exceed NFIP limits, requiring payment from personal funds. Severity of loss may lead homeowner to rethink plans to sell home and/or postpone retirement.	NFIP + excess flood to cover replacement cost of home
Elderly homeowner, no mortgage		
NFIP policy lapsed	Home may be the owners' principal asset and source of funds for future living needs. Without flood insurance, a financial loss could be devastating, and the homeowner would have to tap other funds or rely on relatives.	NFIP + excess flood or primary residential option from the private market



From flames to floods

Southern California's increased flood risk post-wildfires

Southern California is facing an alarming increase in flood susceptibility following the recent devastating wildfires. The destruction of vegetation and soil structure not only heightens the risk of flooding, but also significantly increases the likelihood of mudflows and debris flows. As the region prepares for the upcoming rainy season, it is crucial for residents to understand the implications of these changes and the importance of flood insurance.

Understanding coverage: flood insurance and its limits

Flood insurance is essential for protecting homes and businesses from the financial impacts of flooding. However, it is important to clarify what is covered under the NFIP, particularly in the context of [mudflows and landslides](#):

- Flood insurance coverage, such as the standard policies provided through the NFIP, typically cover damage caused by rising water from flooding. This includes water entering a home or business due to heavy rainfall, storm surges, or overflowing rivers.
- Mudflow is defined as “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. Other earth movements, such as landslide, slope failure, or a saturated soil mass moving by liquidity down a slope, are not mudflows.”
- Earth movement is not covered by flood insurance. A landslide is a slope failure event where rocks, earth, or other materials move down a slope and is an example of earth movement that is not covered. Even if the landslide is triggered by a flood, it is not covered by flood insurance.

As Southern California grapples with the aftermath of wildfires, it is imperative for residents to reassess flood insurance and consider the potential for landslides. Understanding coverage can help homeowners make informed decisions about additional protections they may need to safeguard their properties against the increased risks posed by the changing landscape.



Compelling flood insurance options

To attract new stakeholders, the flood insurance market must embrace innovative alternatives that complement the NFIP. Key options include parametric insurance, community-based catastrophe insurance (CBCI), and Torrent's simplified product, FloodProtectSM. An advantage of alternative products is they are consumer-centric, simple to understand, and easy to purchase.

Parametric insurance

Parametric insurance offers flexible financial protection triggered by specific conditions, such as rainfall thresholds. Unlike traditional indemnity insurance, which compensates for specific losses, parametric policies respond to predefined risk parameters, streamlining the claims process.

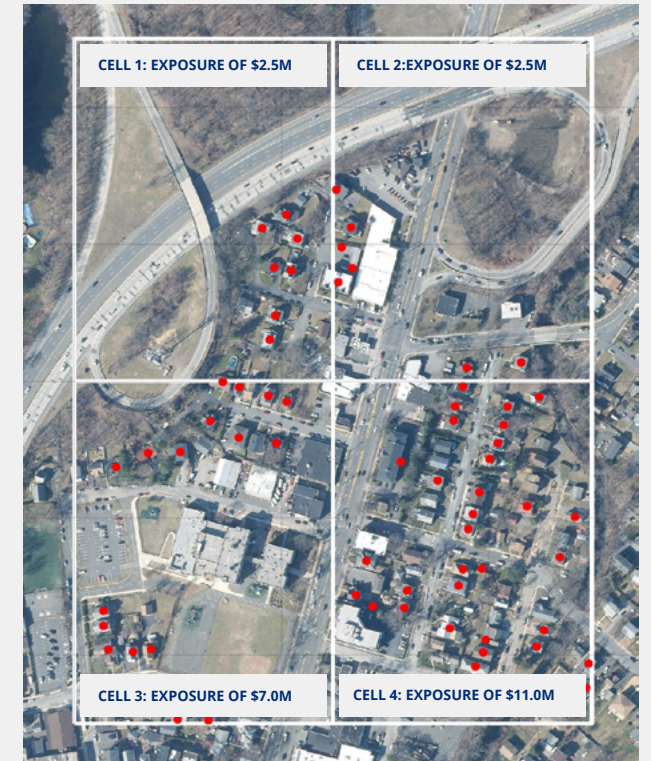
An innovative example of parametric flood insurance is [GC FloodShieldSM](#) by Guy Carpenter, a Marsh McLennan company. This solution offers several benefits that differ from conventional flood insurance. GC FloodShield is:

- **Fast:** When coverage is triggered, payments are made within weeks, not months or longer. Another advantage of parametric coverage is it does not require traditional claims adjustment, which can be time-consuming, particularly following disasters.
- **Transparent:** Coverage under the parametric policy is clear and easily understood by the buyer and seller.

- **Flexible:** Recovery funds can apply to economic losses, not just physical damage. GC FloodShield covers any loss, including property and business interruption, when the policy is triggered.
- **Customizable:** Parametric policies offer a range of different triggers and scale to fit a broad set of budgets.
- **Broad in application:** GC FloodShield is available to public and private sector entities globally.

GC FloodShield defines covered locations through a customizable grid of cells that corresponds to loss exposures. Here is an example: A manufacturing facility has a flood exposure of \$20 million, but that exposure is concentrated in only a few areas of the property. A grid of cells used to map the manufacturer's flood exposure shows a mix of high and low exposures — \$10 million in one cell, \$2.5 million in others. The parametric loss for the facility is determined by the percentage of inundation in each cell at different reporting times, with the exposures aggregated to determine the payout. The coverage is the maximum parametric loss in each cell across all time steps. With a parametric policy offering \$20 million in limits, the manufacturer can recover funds for different amounts of inundation across all the cells in its coverage grid.

07| GC FloodShield cell grid example



● Exposure Location

*Graphic courtesy of Guy Carpenter



Community-based catastrophe insurance (CBCI)

[CBCI](#) is arranged by community entities, covering multiple properties, and offering flexible structures. It can provide smaller payouts for community members during disasters or full-limit protection in high-risk areas. This approach fosters collaboration between communities and private insurers to enhance recovery efforts.

An excellent example was the [CBCI pilot project](#), a collaboration between Swiss Re, Guy Carpenter, and ICEYE, that delivered an innovative parametric community flood insurance scheme for New York City neighborhoods, particularly benefiting low- and moderate-income (LMI) communities in high-flood-risk areas. Utilizing ICEYE’s advanced satellite data, real-time sensors, and social media insights, this program is designed to quickly assess flood events and trigger emergency cash grants of up to \$15,000 for qualifying households in the aftermath of a disaster. Led by the Center for NYC Neighborhoods (CNYCN) in partnership with the NYC Mayor’s Office of Climate & Environmental Justice and other organizations, the pilot looked to address the financial vulnerabilities faced by marginalized communities, ensuring they receive timely support when they need it most. By leveraging multiple data sources, the CBCI pilot not only enhanced flood resilience, but also set a precedent for future insurance solutions that prioritize immediate access to funds for those affected by extreme weather events.

Legislative support for flood insurance

Federal legislation — [H.R. 9414](#), The Community Flood Coverage Savings Act — was introduced in the House of Representatives in August 2024. This bill would direct FEMA to organize a voluntary pilot program for community-based flood insurance. Among other provisions, the bill would require a community-wide policy to cover all residential properties within the community and satisfy mandatory purchase requirements under the [Flood Disaster Protection Act of 1973](#). The Flood Disaster Protection Act requires participation in the NFIP for communities and property owners that receive federal disaster assistance.

The [Senate Banking Committee recently announced a working group to find solutions](#) for a long-term reauthorization of the NFIP, led by John Kennedy (R-LA) and Mike Rounds (R-SD). “The National Flood Insurance Program has been operating under a short-term reauthorization for years and with \$20 billion in debt, the program is in desperate need of reform. It is time that Congress do the full work of actually reforming the program to provide

long-term certainty to homeowners, financial institutions, insurers, and other stakeholders. As a former insurance agent, I am grateful to Chairman Scott for trusting Senator Kennedy and myself with this task and we are ready to get to work,” said Senator Rounds.

Torrent’s FloodProtectSM

Another residential flood insurance option is a new product from Torrent, FloodProtect. This truly unique flood insurance solution offers a blanket coverage limit for buildings and contents, has a short waiting period, and is available to property owners in lower-risk flood zones. A simplified experience and as one agent put it, “It’s too easy.”

08 | Primary residential flood coverage options

Features/coverages	NFIP	Private: NFIP-like	Private: FloodProtect <i>Simplified residential option for lower risk areas</i>
Dwelling	\$250,000	\$2 million	Blanket coverage for dwelling and contents
Contents	\$100,000	\$1 million, including contents and personal property	
Contents-only (renters)	\$100,000	\$1 million for personal property	Coming soon
Waiting period	30 days	None or limited	7 days
Additional living expenses	No	Yes, varies	No



09| Primary commercial flood coverage options

Features/coverages	NFIP	Private	Parametric (FloodShield)
Building	\$500,000	Up to \$10 million in combined limits for building and contents	Up to \$100 million; higher limits available via insurance-linked securities
Contents	\$500,000	Up to \$10 million in combined limits for building and contents	Up to \$100 million; higher limits available via insurance-linked securities
Geographic availability	United States	Global	Global
Covered losses	Building, contents	Building, contents, business interruption often available	Any loss, including building, contents, business interruption (subject to contract conditions)
Waiting period	30 days	Limited, e.g., 7 days	None
Customizable	No	Yes	Yes

In addition to primary flood insurance, excess flood coverage is available. This form of additional protection can sit atop underlying primary flood insurance, such as a commercial all-risk policy or private residential flood policy, or an NFIP policy. Combinations of primary and excess insurance can provide substantial financial protection to individuals and businesses for large flood exposures.

By leveraging these innovative insurance options and legislative support, the flood insurance market can significantly enhance accessibility and attract new stakeholders, ultimately fostering greater resilience in communities nationwide.





Taking action

Inaction on flood risk mitigation carries a heavy toll — costing lives, livelihoods, and the long-term vitality of our communities. To combat this pressing issue, decisive action is imperative to reduce flood risks and enhance resilience. At Torrent and Marsh McLennan, we are committed to tackling these challenges through these avenues of attraction amplified in this report.

The actions we envision as important to achieving significant progress in flood risk mitigation include:

- 1. Educate and attract new stakeholders:** We need to educate even more about flood exposure. Risk transfer options must be amplified. The financial repercussions of even minor flooding can reach tens of thousands of dollars — can property owners afford to self-insure against such losses? Many individuals fall prey to recency bias, mistakenly believing that a lack of recent floods diminishes their risk. However, FEMA reports that 99% of US counties have experienced flooding in the past 20 years.

As part of this education effort, it is critical we address the increased risk of flooding born from the ashes of wildfire. This is a relevant topic, particularly given the recent horrific fires in Southern California. Charred ground combined with burned up vegetation creates a catastrophic scenario where the soil does not absorb precipitation. Flash flooding and mudflows become even more of a reality. From one disaster to another...

10| Flames to floods



Pre-wildfire
Vegetation helps soil absorb water

Wildfire
Charred soil is a barrier that blocks water

Rain
Water flows downhill or downstream of burned areas

Flash flood
Low-lying areas can flood in hours

Mudflows
Watery mud and swift snowmelt can set off mudflows

- 2. Develop attractive products:** The insurance industry must innovate by creating straightforward, accessible offerings to bundle with standard policies like home, auto, and renters insurance. Solutions such as parametric flood products and community-based catastrophe insurance (CBCI) are essential to meet the diverse needs of individuals, businesses, and communities. Expanding the range of flood protection options will attract new policyholders and help mitigate the societal costs associated with flooding.
- 3. Collaborate:** The collaboration between public and private entities and policymakers is essential for developing sustainable solutions. A long-term reauthorization of the NFIP is a critical first step, providing stability for property owners who rely on this fundamental flood risk transfer mechanism. By removing barriers to innovative insurance solutions, such as parametric coverage, we can accelerate recovery and enhance community resilience.

Marsh McLennan is the world's leading advisor and solution provider for natural catastrophes. Through data-driven insights and extensive industry expertise, Marsh McLennan delivers practical solutions that empower businesses and communities to thrive. The Marsh McLennan [Disaster Resilience Center of Excellence](#) equips public and private sector leaders with the tools to prepare for, mitigate, insure, and recover from disasters.

At Torrent, we aim to be the comprehensive, trusted resource for flood insurance, simplifying the process for solutions through both the NFIP and the private market.

We provide access to NFIP policies, NFIP-like private coverage, and are adding specialized flood insurance products to bridge the protection gap. Our efforts focus on attracting new flood insurance stakeholders through education, a user-friendly platform, and integrated private insurance options that complement the NFIP. Smart flood insurance solutions, simplified.

Together, Marsh McLennan and Torrent are dedicated to collaborating with the public sector, advocating on Capitol Hill, reducing barriers to innovative flood risk solutions, addressing affordability concerns, and fostering dialogue to tackle flood risk. This is a challenge we believe can be effectively addressed through the combined efforts of the public and private sectors. We can take action now to safeguard our communities against the ever-present threat of flooding.



About Marsh McLennan

(Marsh McLennan (NYSE: MMC) is a global leader in risk, strategy and people, advising clients in 130 countries across four businesses: [Marsh](#), [Guy Carpenter](#), [Mercer](#) and [Oliver Wyman](#). With annual revenue of over \$24 billion and more than 90,000 colleagues, Marsh McLennan helps build the confidence to thrive through the power of perspective. For more information, visit marshmclennan.com, follow us on [LinkedIn](#) and [X](#).

About Torrent Technologies

[Torrent Technologies, Inc.](#) is a part of Marsh that provides smart flood insurance solutions with industry-leading service, technology, and products to help close the US flood insurance gap. About 75% of Torrent's Write Your Own (WYO) insurance carrier clients use its full business process outsourcing capabilities, which include underwriting, claims, accounting, agency support, training, marketing, information technology, and mailing services. A cloud-based, software as a service (SaaS) model enables clients to retain elements of flood insurance servicing. Integrated multi-quote, private primary flood and excess flood policies are offered along with the National Flood Insurance Program (NFIP) for a seamless and simplified experience. For more information, visit torrentcorp.com, or follow us on [LinkedIn](#).

Torrent Technologies is a business of Marsh, which along with Guy Carpenter, Mercer, and Oliver Wyman, are the primary businesses of Marsh McLennan.

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