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# Flood Insurance Reform for the U.S. Housing Market

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Flood risks affect homeowners' costs and home values, but the housing finance system may not sufficiently account for these risks. This has the potential to leave consumers, financial institutions and government agencies facing unexpected losses and fiscal burdens. The housing market is important to the health of the U.S. economy, which means that housing market turmoil could strain public finances at local, state, and federal levels, limiting fiscal capacity to address interconnected adaptation challenges, whether domestically or abroad.

Four recommendations aimed at reforming laws and narrowing information asymmetries could help to ensure a more secure and resilient housing market:

1. Ensure that the Federal Emergency Management Agency (FEMA) is permitted to carry out its multi-faceted Future of Flood Risk Data (FFRD) initiative and that the Federal Trade Commission (FTC) requires real estate agencies and financial institutions to inform prospective home-buyers of expected public flood insurance premiums.

These steps will provide homeowners, financial institutions, and government agencies with more accurate information, enabling them to make informed decisions and better prepare for potential flood risks.

2. Make flood insurance an opt-out element of obtaining a mortgage, rather than requiring consumers to decide whether to initiate the process of buying it.
3. Evaluate whether the existing requirement to purchase flood insurance only in high flood risk zones is effective.
4. Incorporate increased flood insurance costs into the process of determining a prospective home buyer's mortgage eligibility.

A wide range of political actors, including realtors, developers, homeowners, state regulators, and some federal actors, may oppose different aspects of these



recommendations. There may also be specific concerns as to how these recommendations may affect low-income home ownership. After lengthy consideration, we believe these recommendations, if implemented, will be helpful to all sectors of American society. In particular, we think all prospective and current homeowners will be better served by avoiding over-investment in risky, underinsured homes.

## Climate Risk and the Housing Market

There are 91 million single-family homes in the United States, of which 11.2 million are in communities facing high flood risk and 4.1 million in communities facing wildfire risk.<sup>1</sup> Homes in communities facing high flood risk, in various parts of the country, constitute 12.2 percent of U.S. home value; in combination with wildfire risk, homes in at-risk communities constitute 17 percent of U.S. home value. These homes in various parts of the country constitute 17 percent of U.S. home value.

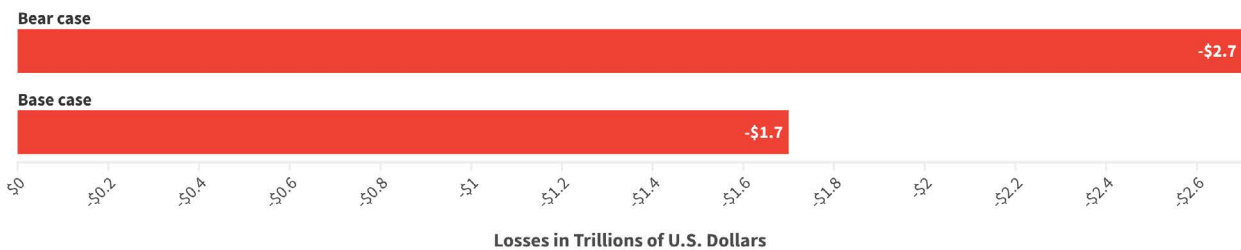
Based on an analysis of home values as of 2020, when the overall property market was valued at \$34 trillion, they could face a value correction of \$1.2–\$1.9 trillion if property markets reprice to reflect the threats posed by increasingly intense and frequent storms, subsidence,

and sea level rise, and wildfires.<sup>2</sup> Because the overall value of the U.S. property market has climbed to approximately \$48 trillion since then, this potential value correction has likely increased to between \$1.7 and \$2.7 trillion.

Such perils can be thought of as components of the physical risk posed to people, property, and financial systems by the changing climate. Yet climate risk has historically not been priced into home sales, mortgage requirements, or property assessments. The effects of climate change and their consequences for homeowners' ability to pay off debt, maintain their homes, and recover from catastrophes have only recently begun to be integrated into financial risk assessments.

The growing recognition of climate risk is changing the housing market in at least two ways: insurance premiums are increasing and home prices are growing less in higher risk areas than in lower risk areas at a time of enormous home value appreciation. This may mean that more risk is being transferred to the federal government, and particularly to Fannie Mae and Freddie Mac. While these trends are most visible in pockets of high-risk areas, they are likely to be seen elsewhere as well: flood events are common outside of the areas defined as highest risk by the Federal Emergency Management Agency (FEMA).

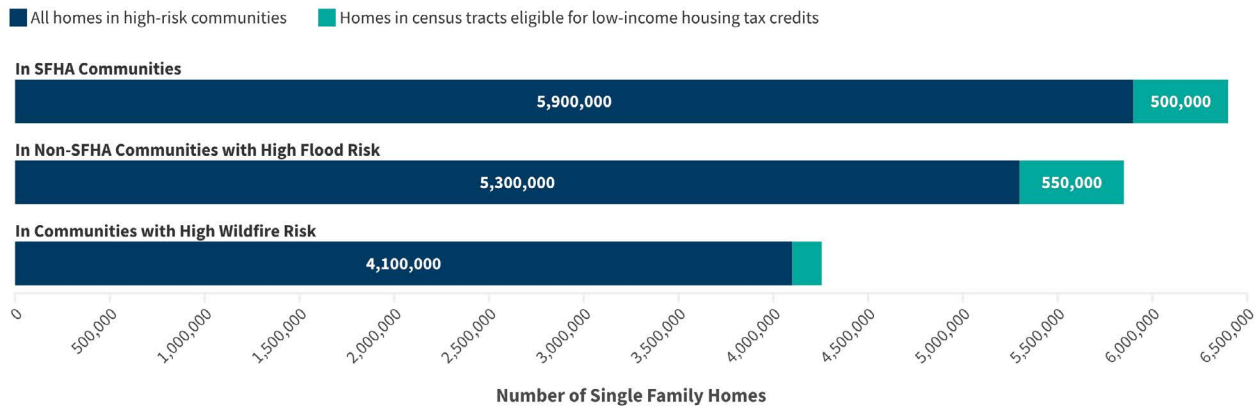
**Figure 1. Estimated Market Losses from Climate-Driven Property Value Corrections**



Source: Based on a U.S. mortgage market impact assessment performed by DeltaTerra in support of its response to a 2021 RFI on climate risk in the mortgage system (DeltaTerra and others' responses available here: <https://www.fhfa.gov/public-input/climate-and-natural-disaster-risk>).

Note: Impact metrics were updated in December 2024 to reflect single-family market growth through the end of year 2022. This update only adjusted for new stock and value growth in the home market, making the assumption that physical risk itself is slow moving within a census tract defined micro-market. This also assumes that new construction had a similar geographic footprint to the previously existing stock. The original scenario construction process synthesized more than 30 economic, behavioral, and market risk models comprising a scenario modeling tool called DeltaTerra Klima®.

## Figure 2. U.S. Single-Family Homes at Risk from Disasters



Source: Based on a U.S. mortgage market impact assessment performed by DeltaTerra.

Flooding risk, on which this article is focused, affects all sectors of society. While there is a higher percentage of communities at risk in the larger population than in the poorest census tracts in the U.S. (16.7 percent versus 13.3 percent), there are still more than a million homes at risk in census tracts that are eligible for low-income tax credits.

At the moment, insurance is the [primary signal](#) communicating [climate change's costs to homeowners](#). To take out a mortgage, homebuyers [must](#) have homeowners' property insurance. Climate change, alongside insurance fraud and regulation in some places, is resulting in insurance that is [too expensive to afford](#). Insurers are withdrawing from places—such as parts of [California](#), [Florida](#), and [Louisiana](#)—where insurance is no longer profitable because of the cost of paying claims, and they are increasingly opting not to renew insurance policies in risky areas.<sup>3</sup>

This article focuses on flood risks because there are at least 11.2 million homes in high flood risk areas, both coastal and inland, and more than [90 percent](#) of disasters in the United States involve flooding—making flooding the United States' [costliest disaster peril](#). Improving information about flood risk and reforming flood insurance are promising pathways toward better protecting Americans from the accelerating costs of ongoing climate change.

## Flood Insurance in Context

The current insurance crisis has antecedents in the 1920s and 1930s, when, [stung by huge payouts for flood damage](#), private insurance companies stopped including flood insurance in property insurance policies. Since 1968, Americans have obtained flood insurance primarily through the publicly administered National Flood Insurance Program (NFIP), run by FEMA. Many homeowners are unaware that their property insurance policies do not include flood coverage or [that their homes may be at risk of flooding](#), or both.

Consumers learn about flood risk from different sources, including through FEMA's flood maps, which indicate three levels of flood hazard. In [Special Flood Hazard Areas \(SFHAs\)](#), which are considered high risk, there is a 1 percent probability of a flood meeting a certain threshold in any given year—or a 26 percent chance of that flood happening over the lifespan of a thirty-year mortgage.<sup>4</sup> In moderate flood hazard areas, identified as Zone B, there is a 0.2 percent chance of a flood meeting a certain threshold each year.<sup>5</sup> In zones designated with an "X" or "C," minimal flood hazard is specified.

Being outside an SFHA does not mean a property is not exposed to flood risk. There are almost [30 million](#) properties outside of flood zones that face high flood risk. However, many actors in the home-ownership



ecosystem, relying on maps that show flood risk as a binary in/out issue rather than a continuous scale of risk, may have no idea. This is particularly true of inland areas, where FEMA's maps [are less useful](#) for predicting flash floods. Also, FEMA's maps do not depict heavy rainfall risks.

Properties in SFHAs are [required](#) to have flood insurance to be eligible for mortgages guaranteed by Fannie Mae and Freddie Mac, the government-sponsored enterprises (GSEs). In spite of this requirement, some [research](#) has found that only a minority of homes in SFHAs actually have flood insurance. The recommendations below deal both with improving implementation of the flood insurance mandate for homes that already have the requirement and with expanding flood insurance coverage to apply to previously untouched homes.

The costs of not having flood insurance can be immense. Consider Hurricane [Harvey](#), which dropped up to a year's worth of rain on parts of Houston, Texas. Estimates of Harvey's economic costs range from [\\$125 billion](#) to more than \$190 billion, mostly from flooding. At least [70 percent](#) of the estimated losses were not covered by insurance. People and communities [struggled to recover](#) without access to capital in the hurricane's wake.

## **Recommendation #1: Communicate FEMA Flood Insurance and Flood Risk Data to the Public and Enforce its Disclosure**

Between 2021 and 2023, FEMA rolled out [Risk Rating 2.0](#), a new framework for pricing flood insurance for NFIP policyholders. Risk Rating 2.0 uses [variables](#) beyond a property's elevation—including flood type, reconstruction cost, and build type—to calculate a property's annual insurance premiums. This policy

change has already begun to [increase premiums](#) for the highest-risk properties, though it is currently the target of a [lawsuit](#).

The new methodology makes it possible to calculate premiums for every property in the country. FEMA has begun to make this information available online with the [NFIP Quoting Tool](#), which shows prospective policyholders what their NFIP premiums would be after they provide some basic information about a property. While this information is available, it has to be sought out by consumers. To ensure consumers are informed about the costs facing the properties they own and rent, the Federal Trade Commission (FTC) should require real estate agencies and mortgage-originating financial institutions to inform consumers of expected property insurance premiums from NFIP before a sale or mortgage origination takes place.

The FTC has provided [examples](#) of how this would work through its enforcement of rules prohibiting misleading advertising and ensuring access to credit. The requirement should apply to all properties in flood zones and those counties where significant flood events are projected to occur. The threshold for what constitutes a significant flood event could be based on the National Weather Service's [flood categories](#), which define minor, moderate, and major flood events.<sup>6</sup>

FEMA has been working on a series of projects collectively called the [Future of Flood Risk Data](#) (FFRD), which would transform FEMA's risk analysis and presentation from the existing in/out zone maps to ongoing assessments of risk for every property, would ensure a significant role for flood risk communications for local government and the private sector, and would generally increase access to flood hazard data. The current narrow, binary, approach to visualizing flood risk is misleading for consumers and leaves them unprepared for rising costs. A graduated, systematized,

broadly implemented approach to depicting and communicating future flood risk will better convey the risks property owners actually face. Congress should consider ensuring that FEMA can carry out its entire FFRD initiative, including by statutorily authorizing FEMA to produce regulatory and nonregulatory maps and funding FEMA to share FFRD products with the public. As data become available, FEMA should release them and replace binary distinctions between flood zones and nonflood zones with graduated depictions of flood risk.

## Recommendation #2: Make Flood Insurance Opt-Out, Not Opt-In

Flood insurance policies are currently opt-in: buyers have to decide to take out a flood insurance policy or are told it will be required for closing if a property is located in an SFHA. But millions of Americans do not have flood insurance even though they live in places with high flood exposure. Flood insurance should be made opt-out: a default insurance policy should be expected for anyone buying a property using a mortgage, whether they live in an SFHA or not. Property owners seeking financing would be able to decline coverage, but to do so, they would be required to affirmatively state that they do not want flood insurance.

Bank and nonbank regulators should ensure that lenders carry out this obligation. The NFIP would be the default flood insurance provider for these policies, with insurance companies writing an NFIP policy alongside property insurance policies, as they already do for homes in SFHAs. Given that the [property coverage cap](#) for NFIP policies is \$250,000, private insurance has the potential to play an important role in insuring properties that require coverage in excess of the cap. Because insurance is regulated at the state level in the United States, state insurance commissioners would

need to oversee the pricing methodology used for this private flood insurance, based on the characteristics of each property.

What would the opt-out model look like in practice? If someone is buying a house and needs a mortgage, they are currently required to have homeowner's property insurance. Under this proposed rule, regardless of where they live, their property insurance will come with an NFIP flood insurance policy priced according to the level of flood risk their home faces, which they can replace with private flood insurance if the option exists in their area. The person can choose to opt out of flood insurance. Otherwise, they stay in, and if there is flood damage that meets the terms of their policy, they will be entitled to claim proceeds.

Research on the power of default options suggests that using an opt-out model will meaningfully increase flood insurance uptake, especially among consumers who may not know much about flood risk or not realize it is not included in their homeowners' property insurance policy. A [meta-analysis](#) found that across a sample of fifty-eight datasets, the inclusion of a default option resulted in a 0.63-0.68 standard deviation increase in the likelihood of it being chosen. Defaults have been shown to powerfully affect how the costs of [organ donation](#) are perceived, by making it feel like a less costly action, and have been found to [increase insurance uptake](#) for low-information consumers in some European countries.

## Recommendation #3: Evaluate Whether the Mandatory Purchase Requirement is Effective

The Flood Disaster Protection Act of 1973 [requires](#) that SFHA properties in communities participating in the NFIP have flood insurance to be eligible for federal assistance, including loans, grants, and guarantees.



Mortgage originators must confirm that mortgagors have flood insurance. FEMA, among several agencies, must check that lenders are conducting their due diligence.

There are [many points of failure](#) in the chain of enforcing the requirement, and it is not clear that it is serving the purposes for which it was designed. A 2020 [report](#) by the Department of Housing and Urban Development (HUD) found that HUD was not enforcing the requirement in North Carolina, which has since been devastated by Hurricane Helene. Only 50 percent of loans made in SFHAs from 2011 to 2019 were compliant with the policy. Similarly, in Florida, only two-thirds of loans were in compliance. Although the original idea behind federal flood insurance was to encourage local governments to limit development in identified floodplains, it has been criticized for failing to incentivize adequate mitigation measures and may in fact encourage additional development.

The overall effectiveness of the mandatory purchase requirement needs to be examined. The Department of Homeland Security's Science and Technology Directorate already has an [agreement](#) with Fannie Mae to collaborate on flood insurance research. FEMA, HUD, the Federal Housing Finance Agency, Fannie Mae, Freddie Mac, and the Federal Home Loan Banks should collaborate to develop secure systems to share updated data on flood insurance coverage. This will allow government agencies and the GSEs to both assess and improve lender monitoring, particularly in areas identified as having the highest risk for flooding, and evaluate whether the mandatory purchase requirement should be extended or ended.

While this evaluation is underway, as FEMA updates its depiction of "flood hazard," it should also expand the definition of "area of special flood hazard" in the [Code of Federal Regulations](#) to allow the GSEs to extend the

remit of the existing mandatory purchase requirement. This will help address some of the informational issues associated with the cutoffs used in the existing flood mapping model, particularly consumers' lack of awareness about the true levels of flood risk to which they are exposed.

## **Recommendation #4: Integrate Flood Insurance Costs Into Lending**

In [June 2024](#), Freddie Mac released rules (effective April 2025) that require mortgage issuers to use full flood risk premiums in calculating housing expense-to-income (HTI) and debt payment-to-income ratios (DTI) for homes within SFHAs. The HTI and DTI ratios are used to determine whether an applicant is eligible for a mortgage loan. Borrowers are currently qualified based on their existing annual flood insurance obligation, which can be much lower than the full flood risk premium because of temporary discounts. Freddie Mac's change reflects the increasing cost of flood risk premiums and the growing realization that unaffordable premiums may jeopardize a homeowner's ability to meet their debt obligations.

Freddie Mac's policy applies only to properties within SFHAs. Fannie Mae, Freddie Mac, and Ginnie Mae should require that full flood risk premiums be used to calculate HTI and DTI ratios for all government-backed mortgages, including those outside SFHAs. Because the cost of flood insurance premiums for a property will reflect its current risk, this is an effective and fair way to price in flood risk for properties. Given the possibility of variance in projected flood insurance premiums, the agencies could consider building a buffer into the DTI ratio, with homebuyers obligated to demonstrate a future capacity to pay for increases in flood premiums.

The GSEs should also integrate FFRD and projected Risk Rating 2.0 premiums into the mortgage origination process. Since the Risk Rating 2.0 methodology is publicly available, this could be achieved by requiring lenders to use current and projected Risk Rating 2.0 premiums for a specified property when calculating HTI and DTI ratios. One avenue for integrating FFRD data into the mortgage market might be for the GSEs themselves to set flood risk thresholds, which, if exceeded, would prevent a mortgage from being guaranteed.

To improve the coverage homes receive, Congress should consider amending the National Flood Insurance Act of 1968 to raise the property coverage cap for single-family homes above \$250,000. Such a change would affect estimated full flood insurance premiums and, therefore, HTI ratios. However, it would also offer more useful compensation to property owners facing rising construction and repair costs when damage occurs.

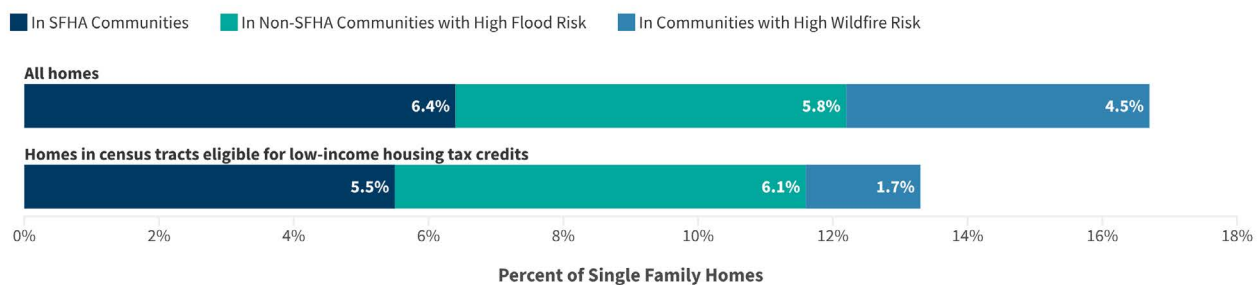
The above four recommendations will raise the income threshold to qualify for government-backed mortgages for high-risk homes. While this comes with costs, particularly the possibility of lower homeownership rates in flood-exposed areas, these costs reflect the reality of flood hazards, potentially leading to a more secure

and resilient housing market. Taking flood hazards into account when determining mortgage eligibility can prevent Americans from being locked into homes they will not be able to afford in the long term and that may pose dangers to their lives and livelihoods.

### If Not Now, When?

Between 2013 and 2023, U.S. home prices grew annually by an average of [7.6 percent](#). In 2021, the year of the biggest increase, prices grew [18.7 percent](#) nationwide—the most in more than three decades. In Florida that year, prices grew even more, by 29.8 percent. Prices in the housing market are extremely robust, including in places that are increasingly vulnerable to flooding and other forms of climate risk. Now is the time to act to reform flood insurance to better communicate flood risks, more accurately price flood costs, and protect Americans more effectively. The question is not whether reforms should be carried out but when: today, when property owners are enjoying a relatively resilient housing market with robust home valuations, or tomorrow, when property owners will increasingly be coping with accelerating flood risks and costs they were never prepared to face.

**Figure 3. Percentage of Homes at Risk of Floods and Wildfires**



Source: Based on a U.S. mortgage market impact assessment performed by DeltaTerra.

## About the Authors

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## Notes

- 1 “High flood risk” means that the annual probability of significant damage from flooding is greater than 1 percent. Presentation by David Burt, DeltaTerra Capital, “Flood Risk and the Housing Market,” November 13, 2024.
- 2 Ibid.
- 3 Senate Budget Committee Staff Report, “Next to Fall: The Climate-Driven Insurance Crisis is Here-And Getting Worse,” December 2024.
- 4 SFHAs are identified on maps with zone designations that begin with “A” or “V.” V zones designate areas where there is expected to be at least a three foot breaking wave during a 1 percent annual chance event. A zones designate all other coastal or inland flood hazards.
- 5 Moderate flood hazard areas may also be indicated with shading (“shaded X zones”). These are areas protected from flooding by levees.
- 6 “Significant events” could also be established based on whether the frequency of flood events exceeds a certain threshold, or based on the occurrence of a billion-dollar disaster that included flooding.

*For complete source notes, please read this article at [CarnegieEndowment.org](https://www.carnegieendowment.org).*

