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Hearing on Reauthorization and Reform of the National Flood Insurance Program
U.S. House Committee on Financial Services
Subcommittee on Housing, Community Development, and Insurance
United States House of Representatives
May 25, 2022

Good afternoon. I would like to thank Subcommittee Chair Cleaver, Ranking Member Hill, and the esteemed members of the subcommittee for the invitation to speak to you today. I would also like to thank Committee Chairperson Waters, Ranking Member McHenry, and members of the broader committee for their support and attention to the National Flood Insurance Program (NFIP). I am pleased to have the opportunity to testify today and share my perspectives on current policy priorities for the program. I am the Executive Director of the Wharton Risk Center at the University of Pennsylvania.

The Wharton Risk Center has been undertaking research on a range of disaster risk management topics for over three decades. The NFIP has long been a focus of work at the Center. It has also been a program that I have been investigating for fifteen years. I have been involved in research on multiple aspects of the program, including the mandatory purchase requirement, drivers of demand, increased cost of compliance coverage, adverse selection, incentive effects, pricing, and the private flood insurance market. My research on this program, and that of my colleagues, informs my testimony today. I will focus my remarks on the role of insurance in providing financial resilience to floods, the updates to current pricing in the program, the continuing need for an explicit means-tested assistance program for flood insurance, and how climate change will pose new stresses for the NFIP that will need to be addressed.

Escalating Flood Risk and Inequitable Recoveries

Flooding is the costliest natural disaster and the risk is escalating in many places due to the combined effects of climate change, development, and land use decisions. Sea level rise has already led to an increased probability of coastal flooding, which will continue, and is projected to cause higher flood damages in the coming years.¹ Climate-induced intensification of rainfall

¹ Sweet, W. V. and J. Park (2014). "From the extreme to the mean: Acceleration and tipping points of coastal inundation from sea level rise." *Earth's Future* 2(12): 579-600; Neumann, J. E., K. Emanuel, S. Ravela, L. Ludwig, P. Kirshen, K. Bosma and J. Martinich (2015). "Joint Effects of Storm Surge and Sea-level Rise on US Coasts: New

is also projected to increase flooding in certain parts of the United and this, in turn, could escalate flood damages.² In addition to climate changes, our land use and development decisions have also, at times, increased flood risk. Decisions such as reducing impervious surface area, eliminating natural systems, such as wetlands, that can store floodwaters, continuing building in areas known to be at high flood-risk, and failing to build in way that is mindful of escalating risk, all worsen flooding.

Prior research has found that lower income groups and racial minorities suffer disproportionately from disasters, such as floods, and recover less quickly than more privileged residents.³ The challenges begin before a disaster occurs. These households may live in riskier areas and less safe housing. They may have little or no access to preparedness resources and information. A key driver in inequitable recoveries, though, is a lack of access to the necessary financial resources for repairs and rebuilding. Severe floods take a huge financial toll on households, not just from devastating property damage to homes and their contents, but also additional costs such as evacuation, temporary living expenses, debris clean-up, generators and fuel if households lose power, longer commutes if businesses and transportation are damaged, and more.

As this long list of costs demonstrates, severe floods are a negative economic shock—an event of limited duration, but one where necessary expenditures increase and income can also decline. Financial resilience—the ability to recover quickly from negative economic shocks—underpins all aspects of recovery. Having sufficient resources to rebuild and repair damages improves emotional well-being, mental health, physical health, and the stability of families.⁴

Economic Estimates of Impacts, Adaptation, and Benefits of Mitigation Policy." *Climatic Change* 129(1-2): 337-349; Garner, A. J., M. E. Mann, K. A. Emanuel, R. E. Kopp, N. Lin, R. B. Alley, B. P. Horton, R. M. DeConto, J. P. Donnelly and D. Pollard (2017). "Impact of Climate Change on New York City's Coastal Flood Hazard: Increasing Flood Heights from the Preindustrial to 2300 CE." *Proceedings of the National Academy of Sciences* 114(45): 11861-11866.

² Wobus, C., M. Lawson, R. Jones, J. Smith and J. Martinich (2013). "Estimating Monetary Damages from Flooding in the United States under a Changing Climate." *Journal of Flood Risk Management* 7(3): 217-229; Mallakpour, I. and G. Villarini (2015). "The Changing Nature of Flooding across the Central United States." *Nature Climate Change* 5(March): 250-254; Prein, A. F., C. Liu, K. Ikeda, S. B. Trier, R. M. Rasmussen, G. J. Holland and M. P. Clark (2017). "Increased Rainfall Volume from Future Convective Storms in the US." *Nature Climate Change* 7(12): 880-884.

³ For example, see: Bolin, R. C. and P. A. Bolton (1986). "Race, Religion, and Ethnicity in Disaster Recovery." FMHI Publications. Paper 88; Fothergill, A., E. G. M. Maestas and J. D. Darlington (1999). "Race, Ethnicity and Disasters in the United States: A Review of the Literature." *Disasters* 23(2): 156-173; Brunsma, D. L., D. Overfelt and J. S. Picou, Eds. (2010). *The sociology of Katrina: Perspectives on a Modern Catastrophe*. Rowman & Littlefield Publishers; Fussell, E. and E. Harris (2014). "Homeownership and Housing Displacement after Hurricane Katrina among Low-income African-American Mothers in New Orleans." *Social Science Quarterly* 95(4): 1086-1100.

⁴ Farrell, D. and F. Greig (2018). *Weathering the Storm: The Financial Impacts of Hurricanes Harvey and Irma on One Million Households*. J.P. Morgan Chase & Co. Institute. Washington, DC. February; McKnight, A. (2019). *Financial Resilience among EU households: New Estimates by Household Characteristics and a Review of Policy Options*. European Commission, Directorate-General for Employment, Social Affairs and Inclusion. June.

Without the resources to recover, disasters become tipping points into deeper poverty, as households default on loans, accumulate debt, exhaust savings, and forgo important expenditures.⁵

The Role of Insurance in Securing Financial Resilience to Floods

So where do households find the necessary financial resources for recovery? There are four key sources of funds: (1) savings, (2) loans, (3) assistance (formal or informal), and (4) insurance. Unfortunately, low- and moderate-income households struggle with access to all of these sources. The Federal Reserve Board has estimated that roughly 40% of households do not have \$400 in liquid funds for an emergency—insufficient to cover the thousands or tens of thousands of dollars needed for flood recovery. Even when households have savings they have accumulated, such as for retirement or their children’s education, draining them to pay for flood repairs leaves them financially insecure and can contribute to long-term negative impacts for the household. The first line of assistance for disaster victims is often a loan, yet credit typically fails for lower-income households, as they may not have the resources to take on additional debt or may be locked out of access to a loan altogether. Indeed, denials for the post-disaster household loan program of the Small Business Administration go up as income declines and these loans tend to be given in more financially secure areas.⁶

With savings and loans insufficient, many households turn to aid. While in some situations, friends or family can help, in a flood, entire neighborhoods may be hit simultaneously. This means those in a family’s nearby social network are also struggling. We also know that federal aid, such as through the Individual Assistance program administered by the Federal Emergency Management Agency (FEMA), may be unavailable and when it is activated, is limited, as it is not designed to bring people back to pre-disaster conditions. While perhaps unintentional, recent research has also found that these grants are regressive, with more financially constrained areas averaging both a lower amount paid and a lower probability of receiving assistance at all.⁷ Other potential sources of longer-term aid, such as programs financed by Congressional

⁵ For example: Fothergill, A., E. G. M. Maestas and J. D. Darlington (1999). "Race, Ethnicity and Disasters in the United States: A Review of the Literature." *Disasters* 23(2): 156-173; Pastor, M., R. D. Bullard, J. K. Boyce, A. Fothergill, R. Morello-Frosch and B. Wright (2006). *In the Wake of the Storm: Environment, Disaster, and Race after Katrina*. New York, Russel Sage Foundation.

⁶ Sweeney, K., M. Dauer, and B. Thomas (2022). Federal Disaster Assistance: An Overview of Post-Disaster Programs. Wharton Risk Center Primer, University of Pennsylvania, Philadelphia, PA, February; Billings, S. B., E. A. Gallagher and L. Ricketts (2021). "Let the Rich be Flooded: The Distribution of Financial Aid and Distress after Hurricane Harvey." SSRN Working Paper.

⁷ Billings, S. B., E. A. Gallagher and L. Ricketts (2021). "Let the Rich be Flooded: The Distribution of Financial Aid and Distress after Hurricane Harvey." SSRN Working Paper; FEMA (2020). National Advisory Council Report to the FEMA Administrator. Federal Emergency Management Agency. Washington, DC, November.

appropriations to the Department of Housing and Urban Development's Community Development Block Grant – Disaster Relief (CDBG-DR) program, are uncertain, and when funded, take years to reach households. For example, recent research found that on average, housing activity from CDBG-DR funds after Hurricane Sandy began almost two and a half years after the disaster declaration.⁸

This leaves insurance. Yet many at-risk households are uninsured against flooding. FEMA estimates that on average nationwide, only about 35% of households in Special Flood Hazard Areas have flood insurance, while less than 2% of those outside this area have flood insurance.⁹ There is, however, high regional variation, with take-up rates much higher in coastal communities along the Gulf and Atlantic coasts.¹⁰ But, as flood after flood reminds us, far too many Americans at risk do not have the necessary flood insurance coverage.

This is problematic because **prior research has found that if individuals have insurance, their recovery is improved.**¹¹ This makes sense: with other sources of post-disaster funding limited or delayed, insurance plays a critical role in getting households the needed financial resources to rebuild their homes and replace damaged possessions. When households can rebuild, they can more quickly resume normal economic activities in their communities and have less need for public sector assistance programs. Yet, the people who need insurance the most are the least able to afford it.

The NFIP and Current Pricing Reform

Before discussing an affordability program for the NFIP, let me first provide a bit more context on the history of public-sector disaster insurance. As everyone on this committee knows, the NFIP was established over fifty years ago in response to a lack of coverage in the private sector. Floods are not the only peril for which the public sector has had to offer coverage. Every state exposed to hurricanes has a so-called wind pool or beach plan for those who cannot find or afford wind coverage in the private market. California has the California Earthquake Authority, as well as their FAIR (Fair Access to Insurance Requirements) program, which is now writing increasing numbers of wildfire insurance policies. Finally, federally we have the Terrorism Risk

⁸ Martín, C., D. Teles and N. DuBois (2021). "Understanding the Pace of HUD's Disaster Housing Recovery Efforts." *Housing Policy Debate*, 1-26.

⁹ Federal Emergency Management Agency (FEMA). 2018. An Affordability Framework for the National Flood Insurance Program. Washington, DC, April 17.

¹⁰ Kousky, C. (2018). "Financing Flood Losses: A Discussion of the National Flood Insurance Program" *Risk Management and Insurance Review*. 21(1): 11-32.

¹¹ Kousky, C. (2019). "The Role of Natural Disaster Insurance in Recovery and Risk Reduction." *Annual Review of Resource Economics* 11(3).

and Insurance Program. So for our most catastrophic disasters, we have some type of public sector program.

These programs were put into place because catastrophes are difficult for the private sector to insure on their own. The fact that losses can be so severe, and impact so many people simultaneously, means that some of the underlying principles of risk pooling, on which insurance is based, fail to hold. This makes disaster insurance fundamentally more expensive than non-disaster insurance. And, at times, there may not be any price at which insurance companies can profitably offer disaster coverage *and* that consumers are able or willing to pay. These breakdowns in insurance markets, often witnessed after disasters, have led to the creation of many of the public sector programs just mentioned.

That said, all of the various public disaster insurance programs—here and around the world—struggle with the basic question of who should pay for disaster losses. Some other countries take a “solidarity” approach to pricing disaster insurance, charging one flat fee to all residents (perhaps varying by property type or coverage limit). They make disaster insurance universal and compulsory. The United States has shied away from embracing a solidarity approach to pricing, but it has also eschewed a fully market-based approach of pricing each property according to its individualized risk level. Some stakeholders advocate that pricing only on risk levels could encourage safer building and better decisions about where to build. And there are those who believe that if someone chooses to live in a risky area, it is their responsibility to shoulder the costs of that decision. But, in practice, some of the disaster insurance programs in the U.S. have cross-subsidies (if sometimes implicit or hidden) that keep costs lower for those in high-risk areas. This is true for several of the state wind pools and was also historically true for the NFIP.

Last month, though, FEMA completed roll out of its new approach to pricing flood insurance, Risk Rating 2.0. This new pricing methodology harnesses modern data and modeling tools to better price the flood risk of a given property. While there are still certain adjustments that are likely warranted, **this modernization of rate-setting is long-overdue for the program**, which has operated with an approach to price setting that is way behind the tools and capabilities of the private sector. This new approach will now allow flood insurance premiums to more closely reflect the risk for individual properties. It will undo cross-subsidies across flood zones and eliminate price “cliffs,” where two properties at similar risk could have faced substantially different premiums if a flood zone boundary crossed between them.

Risk Rating 2.0 will also take a small, but important, step in improving affordability for certain homeowners. The old approach to pricing in the NFIP had a cross-subsidy from lower-valued

homes to higher-valued homes because the program did not adjust pricing for the value of the home or the share of it that was insured. Why does this matter? Consider a \$1 million home and \$100,000 home. Assume both owners purchase \$100,000 of flood insurance coverage. A claim of that amount for the lower-value home means the house was completely destroyed—a very rare, catastrophic event. A claim of \$100,000 is much more likely for the \$1 million home, since it would occur when a disaster damages only 10% of the home—a more likely occurrence. Because of this, the \$100,000 insurance policy should cost more for the \$1 million home, since it is only insured to 10% of its value, making it more likely the insurer will have to pay claims to that property. Most property insurers factor this in when pricing their policies. The NFIP is finally doing so with Risk Rating 2.0.

While this is an important change, it is *not* a means-tested assistance program for flood insurance. Such a program is needed to help bring the financial resiliency benefits of flood insurance discussed above to the lower income households that need it the most. That is why **it is critical to pair Risk Rating 2.0 with a means-tested assistance program to target premium help to those most in need.**

An Affordability Program for the NFIP

The need for a means-tested assistance program for the NFIP has been recognized for a decade. In this time period, there has also been substantial investigation into how to design such a program from many groups including The National Research Council, RAND, independent researchers, and FEMA itself. It is time to use that combined research to adopt and implement a program.

The National Research Council¹² suggested that designing an affordability program would need to answer the following six questions:

1. Who will receive assistance?
2. What type of assistance will be provided?
3. How will assistance be provided?
4. How much assistance will be provided?
5. Who will pay for assistance?
6. How will an assistance program be administered?

The prior reports by the above groups can help answer these questions. I will raise just a couple thoughts on the questions of who will receive assistance and how much.

¹² National Academies of Sciences, Engineering, and Medicine (2015). Affordability of National Flood Insurance Program Premiums: Report 1. Washington, DC: The National Academies Press. <https://doi.org/10.17226/21709>.

The primary decision with respect to the first question is how to identify the households most in need. While income is a natural measure that has been used in many previous programs, there is a concern that aid could be given to households with extremely high net worth that are not currently earning a paycheck. FEMA's Affordability Framework has suggested an administratively achievable policy to address this: households must certify that their net worth does not exceed a specified threshold, with periodic audits on those attestations.

A next question is at what level are benefits provided. Here, I would urge the committee to consider a **tiered program** that would not simply provide assistance to those below a threshold and none to those above, but provide a sliding scale of benefits, such that assistance phases out as income increases. This would allow assistance to scale with need and also prevent there being an abrupt cutoff to benefits.

Draft legislation has also suggested limiting access to the assistance using several other criteria. Some of these reflect priorities in spending public dollars that have widespread support, such as limiting this program only to primary residences. I do think the committee should revisit, however, the decision in draft legislation to limit this program to existing policyholders only. There are two difficulties with this limitation. First, as suggested in FEMA's Affordability Framework report, there are many households at risk of flooding who are currently not policyholders because they cannot afford to purchase a policy. These are the very households we should wish to help: those currently locked out of the protections of flood insurance because they cannot afford a policy. I believe **the assistance program should offer help to any qualifying household, regardless of current policy status**. This will allow households that have not been able to afford coverage to newly enter the program, providing financial resilience for themselves and their communities.

Second, as climate change advances, flood risk is going to escalate in many places around the country. This means that there will be lower-income households that are not currently in areas of high risk, but which will become so in the coming years. For their financial recovery and that of their communities, I urge you to consider extending the benefit to households not currently in the SFHA, as well.

The objection to these expansions is one of moral hazard. Could providing the assistance create a perverse incentive for people to build unsafely or move into high-risk areas? I think if we were considering rate suppression across all policyholders, this would be a very important concern. There is no evidence, however, that when limiting our discussion to lower-income populations that premium support would have this perverse impact. Many of these households are trapped in risky locations and in unsafe housing because they cannot afford the necessary retrofits or to

move to safer ground. By targeting federal assistance only to those truly in need, we are providing vital financial resilience, while limiting perverse incentives.

More broadly, however, subsidized flood insurance is only one of many policies that may create perverse incentives to build in high-risk areas. Other subsidies for development, such as for infrastructure, or the lack of strong building codes, may be even more influential, especially because in many high-risk locations, take-up rates are still low, suggesting the availability of federal flood insurance is not a factor in decisions to locate in these areas. That said, as climate risks escalate, we need to send clear signals of higher risk to markets through prices, but we also must adopt stronger building codes and increase public sector support for mitigation. Lack of information and externalities prevent prices alone from being sufficient for triggering the needed investments in risk reduction.

Some NFIP practices are currently hindering full information on flood risk from reaching markets. Only current policyholders can request information on prior claims for a property and only insurance agents can look up the cost of flood insurance for a property. Potential homebuyers also have no way of knowing if the home they are purchasing is about to become a repetitive loss property—a designation with serious financial consequences for them. People need all this information when they are considering a move to somewhere new—and they need it early in the search process. **A simple online tool that could be used to look up prior floods, repetitive loss status, and provide the cost of insurance for any given property would help buyers in making sound decisions about where to live.** After major floods, there are too many stories of people who never would have moved into a location if they had been given full information on the flood risk of a given property. This is material information that should not be kept hidden. As risks escalate, we do not want to continue to trap households in high-risk areas.

Of course, current homeowners in very risky areas do not want to make such information transparent, since it would, quite rightly, lower the value of their home. We need to make it easier for current occupants of very high-risk areas to mitigate their risk or accept a floodplain buyout to preserve their property value or financial position as risks escalate. This is true across income levels, but financially- and climate-vulnerable communities will need additional help.

Affordability and Mitigation

As discussed earlier, flood risks are escalating. This is imposing higher costs on households, as well as the federal government. According to the Government Accountability Office (GAO), since 2005 the federal government has spent at least \$450 billion on disaster assistance. It is critical to recognize that not only can greater investments in risk reduction reduce the financial

burden of disasters on households, businesses, and the public sector, it is also a complement to insurance. **As we lower disaster risk, we make it easier and cheaper to insure against them.**

Our public insurance programs, like the NFIP, often have broader mandates to support risk reduction and risk communication. Because of this, they invest more heavily in these synergistic activities than do private insurers. The NFIP's work on flood risk reductions has paid dividends around the country. The NFIP mandatory floodplain regulations that participating communities must adopt are credited with helping limit flood losses. The NFIP also has an incentive program, the Community Rating System, designed to reward communities that take actions to better manage flood risk with lower premiums for residents. Research has found that communities that participate in the program have both lower flood claims and lower overall losses.¹³

Still, the program has not gone far enough with risk reduction. The NFIP has a group of highly risky properties that have seen repeated flooding—aptly named repetitive loss properties. They make up only a small share of policies, but a larger, and disproportionate, share of claims. From 1978 to 2015, just 160,000 repetitive loss properties (about 3% of all policies) received \$9 billion, or roughly 25% of all claims payments.¹⁴ Many observers of the program have argued for more aggressive mitigation of these properties or for the NFIP to stop insuring them altogether after a certain number of losses. Certainly, a private firm would never continue paying to rebuild a home placed in such a risky location that it was destroyed time and time again. Development in such areas is uneconomic and yet currently enabled by the NFIP.

For many of these properties, the costs of continued occupancy outweigh the costs of relocation. Our federal floodplain buyout programs were designed for this need: to purchase risky properties and return them to open space in perpetuity. Unfortunately, these programs are missing important opportunities and wasting financial resources. The timing of buyout dollars through the Hazard Mitigation Grant Program or the Community Development Block Grant-Disaster Relief program take too long to make their way to homeowners ready to move.¹⁵ Households—especially those of limited means—cannot wait for years for the federal funds to get to their community and for the buyout process to be undertaken. Many may begin the rebuilding process to make their home safe for habitation, often using partial or full flood

¹³ Kousky, C. and E. Michel-Kerjan (2015). "Examining Flood Insurance Claims in the United States." *Journal of Risk and Insurance* 84(3): 819-850; Highfield, W. E. and S. D. Brody (2017). "Determining the effects of the FEMA Community Rating System program on flood losses in the United States" *International Journal of Disaster Risk Reduction* 21: 396-404.

¹⁴ See: NFIP (2017). Developing a Repetitive Loss Area Analysis for Credit under Activity 510 (Floodplain Management Planning) of the Community Rating System, online at: <https://crsresources.org/files/500/rlaa-guide-2017.pdf>.

¹⁵ Wiley, H. J. P. and C. Kousky (2020). "Speeding Up Post-Disaster Housing Buyouts." *Solutions* 11(3).

insurance payouts, only to have the home demolished months or years later in a buyout. Insurance payouts used to repair a home that will then be demolished are wasted funds that could have gone to expanding buyouts or lowering buyout costs if they could have been undertaken quickly post-flood.

A critical reform would make some federal buyout dollars available immediately after a flood or allow for local reimbursement of floodplain buyouts. The federal delay is only part of the long timeframes. Another source of delay comes from the tasks required for local implementation of buyouts. These can be reduced through pre-disaster evaluation and prioritization of where buyouts will occur, which properties are eligible, and conducting the necessary appraisals and approvals. To incentivize local communities with high-risk areas to do this necessary pre-disaster work, **the expedited or reimbursed federal buyout funds could be tied to demonstration of a pre-disaster buyout planning process.**

While reforms such as these are needed across all communities, the committee should also consider linking some mitigation assistance to an NFIP means-tested premium assistance program. If we lower the risks of lower-income households through retrofits, or in the extreme, floodplain buyouts, we reduce insurance costs and reduce the overall costs of a federal means-tested assistance program for insurance. This could be done by providing flood mitigation grants to households that are also eligible for premium assistance, for example, or even conditioning assistance on mitigation, when it has been determined that there are cost-effective measures that could be undertaken for the given property.

Conclusion

Flood insurance has a critical role to play in promoting resilience by protecting households and businesses against negative financial shocks, speeding recovery, and potentially lowering risks ex ante through financial incentives. All households need access to these benefits of insurance. This can be guaranteed by adoption of a means-tested assistance program to help lower-income households with the cost of flood insurance. In addition, as flood risk grows in the coming years, risk reduction is going to become more important as a key complement to insurance. Reforms to better target and speed federal mitigation dollars can support this goal.