



Resilient Reform For The NFIP

A Path Forward For A Sustainable Flood Insurance System

Findings:

- **The NFIP, already \$23 billion in debt, faces a troubling future without reform as flood risks rise and the coastline crowds**
- **Political challenges have thwarted economic reforms; however, new technology, creative solutions, and an alignment of key stakeholders mean the time is right for reform**
- **The framework for NFIP reform should:**
 - **Unmask price signal by making premium subsidy transparent**
 - **Respect the science**
 - **Put mitigation at the core of resilience**
 - **Ensure a balance of stakeholder interests through a long-term transition with clear mileposts**

Entitlement reform has eluded Congress for years, even while delays may only increase the pain reform brings in the near-term. The main challenge facing Social Security, Medicare, and Medicaid reform debates is simple – nobody agrees on the path forward. Yet, this is by and large not the case for the federal flood insurance program. The need for reform is urgent, our understanding of the problem – and the solution – are enhanced by new data, substantive reform proposals have been developed, and key public and private stakeholders are aligned on the need for change.

Even with these conditions in place, sustainable reform will require the right approach for it to take hold.

In this paper, we examine the National Flood Insurance Program (NFIP) reform landscape and discuss the key tenets on which effective and sustainable reform ought to be built.

The Current Unsustainable Structure Is Facing Rising Expected Costs

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disasters has never been greater. Average direct annual flood losses in the United States have increased steadily

from \$3.2 billion in the 1980s, to \$5.6 billion in the 1990s, to \$9.9 billion in the 2000s.¹ The upward trend of flood related “billion-dollar disasters” has exposed the NFIP’s unsustainable revenue and payout streams for its 5.5

million policies.² The program is currently over \$20 billion in the red and, absent meaningful reform, will take on even more debt at a time when many predictions suggest even more extreme weather over the next 10 years.

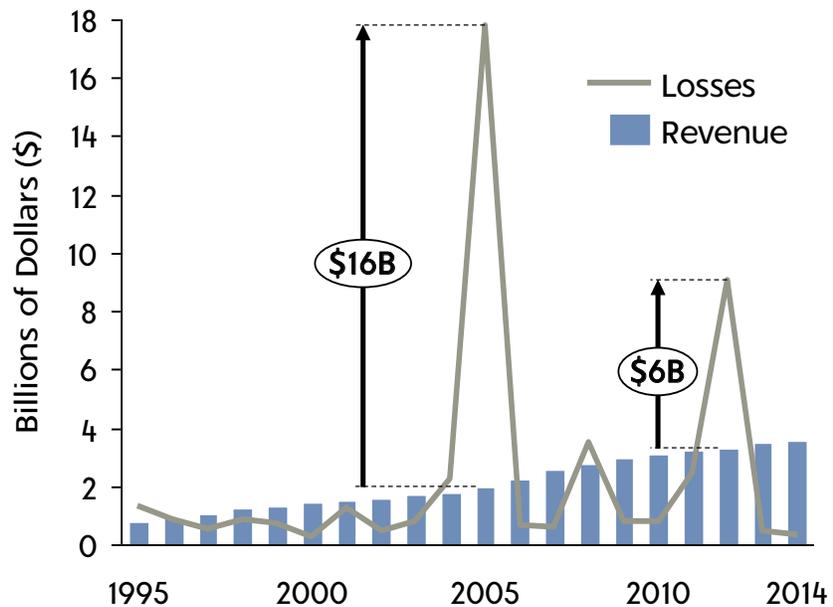
Making matters worse, rising flood risks have not prevented the U.S. coastline, which contains nearly half of U.S. gross domestic product, from growing even more crowded. Retiring baby boomers seem to be forgetting – or ignoring – that if they can see the water, the water can see them too.

And all this when one only needs to look at neighborhoods in New Orleans, Louisiana, Rockaway, New York, and Monmouth County, New Jersey to see graphically just how ineffective our current disaster relief programs are.

In addition to urgency, the evolution of various technologies has given us more detailed knowledge and insight into flood risks than ever before. In fact, the Federal Emergency Management Agency (FEMA) is already taking the first step in revamping its outdated flood maps with new Digital Flood Insurance Rate Maps (DFIRMs), which it plans to have released for most of the United States' coastal areas by 2018. An analysis of DFIRMs in North Carolina revealed that the costs of building new maps was far

Fig. 1: NFIP Has Taken On \$23 Billion In Debt Due To Large Post-2000 Loss Payouts And Below Market Premiums

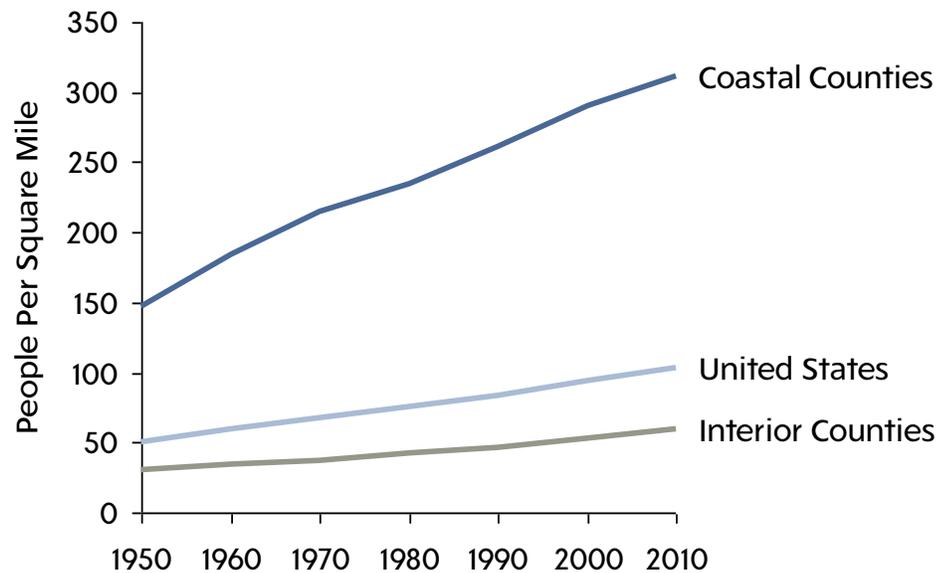
NFIP Loss Payouts Versus Premium Revenue



Source: National Oceanic and Atmospheric Administration (NOAA)

Fig. 2: Coastal Counties Are Growing Significantly More Crowded Than The United States As A Whole

U.S. Population Density By County 1950-2010



Source: U.S. Census Bureau; NOAA; HPS Calculations

*Note: Excludes Alaska land area; Coastal counties designated by NOAA as Coastal Watershed Counties

outweighed by the benefits by over a factor of two, principally through avoided losses to new buildings and avoided infrastructure repairs.³

Perhaps even more promising, the power of big data could dramatically alter both the assessment and management of flood exposures if we applied modern-day analytics to the massive troves of structured data held in government servers. The Obama Administration, led by the National Oceanic and Atmospheric Administration (NOAA), has taken a leadership role in exploring ways to repackage its current data for broader use, and the flood approach could serve as a model for other complex risks.

Policies Are Developed And The Politics Seem Ripe For Reform

But urgency supported by facts still isn't enough; you also need solutions. Luckily, when it comes to flood policy, there is no shortage of creative ideas. Some – like those from the Institute for Business & Home Safety or the BuildSmart Coalition – suggest how enhanced holistic mitigation strategies can save lives and money. Others – including those from the National Academy of Sciences, SmarterSafer.org, and Wharton's Risk Management and Decision Processes Center – put a

Case Study: Flood Mitigation In The UK Pays Off

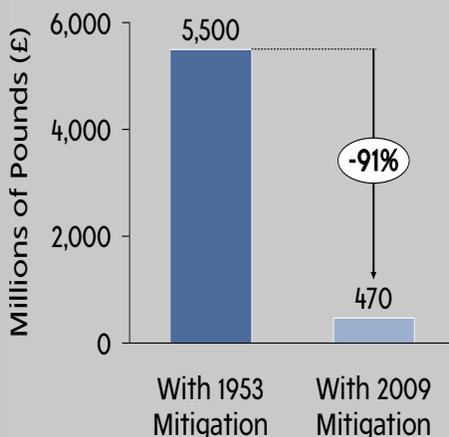
In January 1953, the east coast of England experienced a flood that is still known today in the United Kingdom as “the worst national peacetime disaster to hit the UK.” The storm led to 32,000 people being evacuated, 24,000 houses damaged or destroyed, and exposed a weak flood mitigation system that saw 1,200 defenses breached. The UK has since significantly bolstered its flood mitigation structures and practices, including erecting a barrier on the River Thames and the recent construction of a flood-wall and embankment scheme along the River Mersey in Warrington.

Researchers examined just how beneficial these flood mitigation systems in the UK are today through a retrospective analysis. They estimated that if a flood of the same severity as the 1953 flood were to occur today in the UK, the insured losses

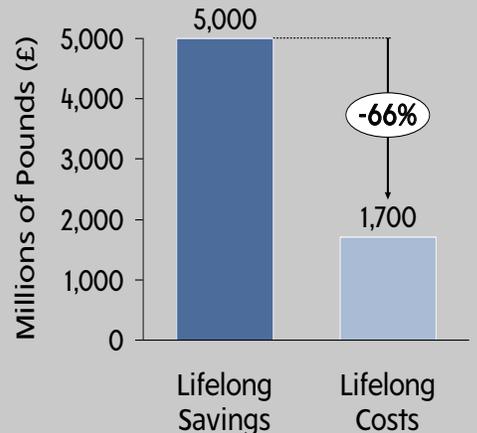
would amount to a staggering £5.5 billion (\$8.3 billion) if the 1953 mitigation system were in place. However, the study found that with the current flood mitigation infrastructure in place, the damage would be less than one-tenth of that amount.

Testing this theory, the 2013 Xaver storm brought one of the highest tide levels since the 1953 flood. The result proved to be a sharp contrast to the damage wrought in 1953: UK's modern mitigation systems prevented major damage to residential and commercial structures – amounting to an estimated £32 billion worth of avoided losses according to Zurich. Additionally, the newly-constructed Warrington system, having prevented an estimated £60 million worth of damage, is estimated to have more than paid for itself as a result of Xaver alone.

Estimated Insured Losses If 1953 Flood Was Repeated

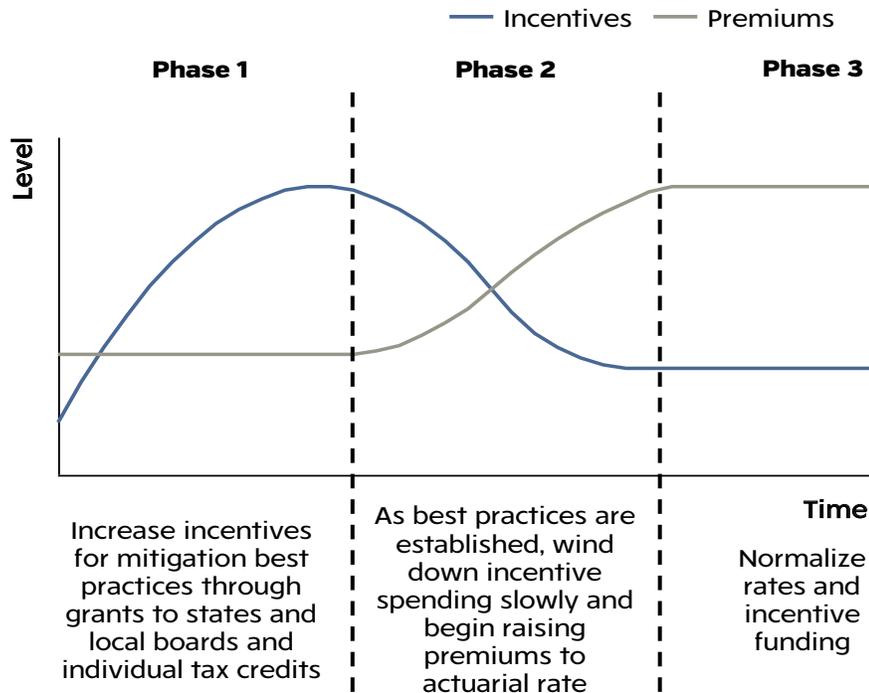


Estimated Loss Savings Vs. Costs Of Thames Barrier



Source: Zurich; UK Met Office

Fig 3: Politically Viable Solution Requires Emphasizing Risk Mitigation First



spotlight on affordability, risk sharing, and privatization issues.

Even urgency, facts, and proposed solutions are not enough if there's no will for change. However, even here it appears the time may finally be ripe for fundamental reform of the flood program.

FEMA itself is actively promoting new ideas and approaches.

Outgoing NFIP director Brad Kieserman recently stated, "I think by now it is clear that the NFIP's 'iceberg is melting.' If

the NFIP is going to continue to be the first line of defense against flood damage

for millions of policyholders, then we must change the way we deliver the Program."⁴ In fact, FEMA is already exploring meaningful reform under its current statutory authority.

Likewise, the insurance sector – recognizing that its core social and economic function of sending risk signals is marginalized, if not eliminated, under the current approach – is keenly

interested in assuming more flood risk, though naturally at market rates. The industry is awash in capital, and its recent upskilling in

predictive analytics would bring private sector discipline to identifying and

managing flood risk.

And finally, Congress – through both the Biggert-Waters reform bill and its populist successor – has shown an ability to transcend party and geographic fault lines to understand the logic behind reform.

So What's Holding Us Back

This begs the question, "Why has lasting NFIP reform eluded us?" The answer is not in the economics, but the politics. Eliminating the flood subsidy immediately for at-risk Americans isn't feasible. It's why Medicare reform proposals typically target the next generation, not the current. NFIP reform is no different. We must think long-term and consider incentives for homeowners and state and local governments to invest in resilience so that the transition to a sustainable NFIP sticks. Furthermore, based on the length of past reforms, we can reasonably expect this reform to last five to 10 years and should act accordingly.

The Path Forward

With this in mind, we offer four principles to guide reform.

- 1. Establish the right incentives by making the subsidy transparent.** Today's crude approach to flood policy pricing overcharges some to under-

charge others. Worse yet, it masks the economic signals that the insurance mechanism typically provides functioning markets. By making the subsidy transparent, the NFIP could incentivize mitigation, attract private capital, and set a long-term path to financial sustainability and improved community resilience.

2. **Respect the science.**

Whether it's predictive analytics, geospatial flood plain mapping, or meteorological forecasting, today's technological capabilities can transform America's approach to flood risks. All parties in the debate should commit to optimizing science-based solutions.

3. **Mitigation must be at the core of resilience.**

Any meaningful reform effort must recognize the fact that a dollar spent in mitigation saves four dollars in disaster relief.⁵ Incorporating this into our nation's flood strategy means providing resources for state and local governments to invest in resilient infrastructure, offering grants to local planning boards to develop and institute mitigation best practices, and using creative tools like tax credits to incentivize individual mitigation measures.

4. **Ensure a balance of stakeholder interests through a long-term transition and clear mileposts.** Access to affordable flood insurance is a key element of financial success and stability for

many American families, at least in flood-prone parts of the country. As such, reformers should be bold and creative, but should also ensure a responsible transition that allows homeowners – and those supporting them – sufficient time to make the behavioral, physical, and financial changes necessary to reflect the risks they face, as well as sufficient assurances that the new program approach will be sustainable.

With these principles serving as the four corners of a responsible reauthorization effort, one could reimagine the components of the necessary reform that would better prepare the country for the wet season ahead. []

Notes:

¹ "Flood Mapping For The Nation: A Cost Analysis For The Nation's Flood Map Inventory," [The Association of State Floodplain Managers](#), 3/1/13.

² "Flood Insurance: Strategies For Increasing Private Sector Involvement," [Government Accountability Office](#), Jan. 2014.

³ "Benefits And Costs Of Accurate Flood Mapping," National Research Council. [Mapping The Zone: Improving Flood Map Accuracy](#). Washington, DC: The National Academies Press, 2009.

⁴ Brad Kieserman, [Testimony to House Subcommittee On Housing And Insurance](#), 6/2/15.

⁵ David Godschalk, Adam Rose, Elliott Mittler, Keith Porter, and Carol Taylor West, "Estimating The Value Of Foresight: Aggregate Analysis Of Natural Hazard Mitigation Benefits And Costs," [Journal of Environmental Planning and Management](#), 52(6), 2009.