The National Flood Insurance Program: Why Government-Backed Flood Insurance Is Drowning in Debt

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THE NATIONAL FLOOD INSURANCE PROGRAM: WHY GOVERNMENT-BACKED FLOOD INSURANCE IS DROWNING IN DEBT

I. AN INTRODUCTION TO THE NATIONAL FLOOD INSURANCE PROGRAM

Joey’s Pizza & Pasta was a long-time popular restaurant located on Long Beach Island, New Jersey. Aside from its food, the restaurant was well known for another thing — flooding. Flooding became so prevalent that the restaurant’s owner, Joe Rulli, added a message to the sign outside that read “Occasional Waterfront Dining.” Rulli credits the National Flood Insurance Program (NFIP) for keeping him in business for nearly thirty years. Rulli filed several insurance claims over the years and worked tirelessly to mitigate the flood damage. The increasing occurrences of floods in his location, however, led him to sell his property to Long Beach Township. Rulli’s story, regrettably, is becoming increasingly more common.

This Comment provides an in-depth review of the NFIP. Part II outlines the NFIP’s evolution and the effects of climate change.

2. See id. (noting commonality of floods at restaurant).
3. See id. (describing restaurant sign).
4. See id. (attributing National Flood Insurance Program (NFIP) for keeping Rulli in business).
5. See id. (listing various measures taken to flood-proof Rulli’s restaurant).
8. For a further discussion of the NFIP as it exists today, see infra notes 87-162 and accompanying text.
on the program. Part II also provides an overview of the insurance market. Part III analyzes the NFIP’s current framework. Part IV then examines issues plaguing the NFIP and explores possible solutions. Lastly, Part V discusses how implementing or ignoring such solutions might impact the NFIP and market participants.

II. A Brief History of the NFIP

In July 2020, the National Oceanic and Atmospheric Administration (NOAA) reported that fifty-seven of sixty-two cities on the East and Gulf Coasts set records for rising relative sea levels. NOAA forecasts that the rate of high-tide flooding may triple by 2030 and possibly increase by fifteen fold by 2050. This dramatic increase in flooding does not come without its costs. As of January 5, 2021, the NFIP is over twenty billion dollars in debt. This debt is primarily due to an increase in the frequency of powerful tropical storms, rising sea levels, and faulty policies and programs.

9. For a further discussion of climate change and its effect on the NFIP, see infra notes 14-71 and accompanying text.
10. For a further discussion of the flood insurance market, see infra notes 72-86 and accompanying text.
11. For a further discussion of the NFIP’s current framework, see infra notes 87-162 and accompanying text.
12. For a further discussion of problems the NFIP faces and potential solutions, see infra notes 163-200 and accompanying text.
13. For a further discussion of the importance of the NFIP moving forward, see infra notes 201-13 and accompanying text.
15. See Flavelle, supra note 14 (reporting projected increase in high-tide flooding). NOAA defines high-tide flooding as water rising at least twenty-one inches above the average high-tide level. See U.S. High-Tide Flooding Continues to Increase, NAT’L OCEANIC & ATMOSPHERIC ADMIN. (July 14, 2020), https://www.noaa.gov/media-release/us-high-tide-flooding-continues-to-increase (defining high-tide flooding).
18. See Walsh, supra note 16 (discussing debt problems of NFIP).
The NFIP’s indebtedness is due to a combination of natural disasters and a lack of private flood insurers. For example, the Great Mississippi Flood of 1927 caused nearly all private insurers to leave the flood insurance market, requiring the government to fill the void through the National Flood Insurance Act of 1968 (NFIA). As natural disaster after natural disaster mounted over the past two decades, the NFIP has remained the sole insurer in a seemingly never-ending debt crisis.

A. The Beginnings of the NFIP

To better understand the NFIP’s dire situation, it is best to start from its inception. In April 1927, heavy rains caused the Mississippi River to overflow at unprecedented levels. The levee system built along the river systematically collapsed over a few weeks, causing flooding in surrounding residential areas to reach up to thirty feet of water. This event, known as the Great Mississippi Flood of 1927, is “one of the worst natural disasters in the history of the United States.” The flood caused more than twenty-three thousand square miles of flooding and displaced an estimated 750 thousand people from their homes. As a result, most private insurance companies stopped providing flood-loss coverage, deeming it too risky. Between 1929 and 1968, the United States flood insurance market was practically non-existent. Instead, Congress passed sev-


20. Id. (stating private insurers left market after 1927); see also Walsh, supra note 16 (determining Great Mississippi Flood of 1927 caused private insurers to drop flood insurance coverage).

21. See Strother, supra note 19, at 452 (discussing historical failure of NFIP).


23. Id. (describing levee system’s collapse).

24. Id. (contextualizing natural disaster).

25. Id. (detailing extent of flood damage).


eral bills and took other measures to help pay for flood disaster relief when necessary.\footnote{29. See id. (listing actions Congress took in aftermath of Great Mississippi Flood of 1927). Congress enacted bills that, among other things, provided direct payments, loans, and investment for flood-prone areas. See id. (detailing effects of congressional legislation).}

In September of 1965, Hurricane Betsy made landfall in the southeastern region of the United States.\footnote{30. Kelby Ouchley, Hurricane Betsy, 64 PARS., https://64parishes.org/entry/hurricane-betsy (Feb. 9, 2021) (noting date of landfall).} It tore through parts of Florida and Louisiana, causing over one billion dollars in damage.\footnote{31. Id. (quantifying damage caused by Hurricane Betsy).} Aside from the financial loss, Hurricane Betsy claimed the lives of seventy-six people.\footnote{32. Id. (stating Hurricane Betsy’s casualties).} The damage left in Hurricane Betsy’s wake spurred calls for the government to fix this “market failure” and create a flood insurance program.\footnote{33. Strother, supra note 19, at 459 (analyzing history of NFIP); see also Bethan Moorcraft, The National Flood Insurance Program — Everything You Need to Know, Ins. Bus. (Mar. 15, 2019), https://www.insurancebusinessmag.com/us/guides/the-national-flood-insurance-program—everything-you-need-to-know-162923.aspx (discussing Hurricane Betsy’s impact on NFIP creation).} In response, Congress passed the NFIA, which created the NFIP.\footnote{34. See National Flood Insurance Act of 1968, 42 U.S.C. §§ 4001-129 (outlining NFIP).}

Congress cited “an increasing burden on the Nation’s resources” resulting from flood disasters as the primary motivation to create the NFIP.\footnote{35. 42 U.S.C. § 4001(a) (delineating need of widely available flood insurance).} The legislation’s purpose centered around two main policy objectives.\footnote{36. Id. (listing reasons for enacting NFIP).} Congress’s first goal focused on providing expansive access to flood insurance.\footnote{37. Id. (codifying overarching goal of NFIP).} This helps minimize the financial risk of property owners in flood-prone areas.\footnote{38. See Flood Insurance, Fed. EMERGENCY MGMT. AGENCY, https://www.fema.gov/flood-insurance (May 26, 2021) (observing advantages of flood insurance).} Moreover, by charging insurance premiums in exchange for coverage, the government shifts the economic burden of paying for disaster relief to the property owners who are most likely to experience flood-related disasters and require federal aid.\footnote{39. See Walsh, supra note 16 (noting benefits of government-backed insurance program over disaster relief bailouts).} Congress’s second goal aimed at reducing the country’s overall flood risk.\footnote{40. See 42 U.S.C. § 4001(a) (explaining purpose of NFIP).} This goal is achieved by conditioning the availability of flood insurance to a community’s...
adoption of floodplain management standards. The standards’ purpose was to curb development in flood-prone areas while also mitigating the effects of flood damage and otherwise improving land management in flood-prone areas.

Before 2005, the NFIP was generally solvent. The 2005 hurricane season, however, required the program to pay over sixteen billion dollars in claims. Disaster struck again during the 2017 hurricane season when Hurricanes Harvey, Irma, and Maria made landfall in the United States. Hurricane Harvey, specifically, caused massive flood damage in the greater Houston area. Despite Congress cancelling sixteen billion dollars of debt in October of 2017, the NFIP borrowed twelve billion dollars to cover insurance obligations stemming from the 2017 hurricane season. The NFIP’s debt will seemingly continue to accumulate due to the increase in sea levels across the globe and the frequency and strength of tropical cyclones.

B. The Effect of Climate Change on the NFIP

Hurricanes and tropical storms that made landfall in the United States over the past two decades are responsible for an overwhelming percentage of the NFIP’s current debt. This issue is

41. See 42 U.S.C. § 4012(c) (listing conditions of flood insurance availability).
42. See id. (delineating minimum standards required to provide NFIP insurance).
43. INTRODUCTION, supra note 17 (reviewing NFIP’s finances).
47. See INTRODUCTION, supra note 17 (examining NFIP financing activities during 2017 hurricane season).
49. See INTRODUCTION, supra note 17 (acknowledging NFIP’s debt problems began shortly after Hurricane Katrina in 2005).
likely to worsen in the coming years, as scientists project that tropical cyclone strength and rainfall rates will increase.\(^{50}\)

Hurricanes are one of the most destructive forces on earth.\(^{51}\) A hurricane requires two things to form: (1) a weather disturbance and (2) warm seawater.\(^{52}\) Research has shown a statistically significant trend that hurricanes today are more likely to strengthen into category three storms or higher when compared to hurricanes in the 1970s.\(^{53}\) These findings support the scientific consensus that rising sea temperatures affect the frequency of powerful hurricanes.\(^{54}\)

Studies have also shown a correlation between an increase in greenhouse gas emissions and rising sea surface temperatures.\(^{55}\) An increase in greenhouse gas emissions traps heat in the Earth’s atmosphere and transfers it back to the ocean.\(^{56}\) As a result, over the past three decades, average sea surface temperatures have been higher than at any other point since 1880.\(^{57}\) Greenhouse gas emis-

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50. See Global Warming, supra note 48 (finding tropical cyclone strength and rainfall rates likely to increase in future).
54. See Global Warming, supra note 48 (finding statistical relationship between rising sea surface temperature and hurricane strength).
55. See id. (linking greenhouse gas emissions to increase in sea surface temperatures).
sions continue to rise, leading to warmer oceans and the likelihood of more powerful hurricanes.  

Global warming and the increase in sea surface temperatures further impact the NFIP’s solvency issues by causing sea levels to rise across the globe. As sea surface temperatures increase, glaciers and ice sheets worldwide melt. Ten percent of the earth’s land is glacial ice, yet this percentage accounts for roughly sixty-nine percent of the world’s freshwater. If all glacial ice melted, the world’s sea level would rise about 230 feet. Indeed, between 2006 and 2015, sea levels rose by 0.14 inches per year, which was more than double the average rate throughout the twentieth century.

Additionally, the volume of the ocean expands as sea level temperatures increase. This phenomenon is known as thermal expansion. Scientists have determined that thermal expansion accounts for about one-third of the increase in global sea levels.

The recent trend in sea level rise shows no signs of stopping. A 2017 study concluded that the most conservative greenhouse gas emission projections would cause sea levels to rise by at least twelve


60. Id. (discussing increased rate of glacier and ice sheet melting).


62. Id. (quantifying future rise in sea level).

63. Lindsey, supra note 59 (examining rate of sea level increase).

64. Id. (analyzing cause of rapid sea level rise).


66. Understanding Sea Level, supra note 65 (determining increase in sea level attributable to thermal expansion); see also Lindsey, supra note 59 (outlining factors contributing to rise in global sea levels).

67. See Lindsey, supra note 59 (discussing future projections of rising sea levels).
inches above 2000 levels by 2100. Conversely, with high levels of greenhouse gas emissions, sea levels could rise to over eight feet above 2000 levels by 2100. Other studies have determined that if melting glaciers and sea surface temperatures continue on their current trajectory, between sixty-six and 106 billion dollars of coastal real estate will be underwater by 2050. Rising sea levels increase coastal flooding risk, which increases the amount of potential claims the NFIP must pay out.

C. An Overview of the Flood Insurance Market

Purchasing insurance is a form of risk management to protect oneself from unforeseen loss. Insurance companies stake their profitability on identifying, pooling, and redistributing risk across their customers. Generally, insurance companies make money in two ways: insurance premiums and the investments made using those premiums. Although insurance revenue models differ across various sectors, the most important function of any insurance company is to adequately price risk and the premiums it charges for assuming that risk. To generate income, insurance companies must price coverage to entice lower-risk customers to purchase insurance, which helps pay for claims from higher-risk customers.

Flood insurance, however, presents the antithesis of a healthy insurance market. Customers face a high risk of flooding when

68. Id. (observing best case scenario for rising sea levels).
69. Id. (noting worst case scenario for rising sea levels).
70. See Risky Business, supra note 7, at 4 (analyzing impact of rising sea level).
73. See id. (identifying insurance companies’ business model).
75. See Ross, supra note 73 (establishing insurance companies’ most important tasks).
76. See id. (explaining insurance company business model).
purchasing coastal properties or homes built on floodplains. As a result, fewer lower-risk customers are willing to buy insurance coverage, potentially exposing private insurance companies to extensive losses. This void in demand is one of the primary reasons why Congress stepped in to create the NFIP, which provides affordable flood insurance coverage to property owners who would otherwise have no other recourse.

Despite flaws with flood insurance, “[F]ederal policies, new technology[,]” and large increases in funding have prompted private insurers to recently re-enter the market. In 2019, Congress authorized regulated lending institutions to accept certain private flood insurance policies in lieu of an NFIP plan. Congress’s new regulation permitted property owners to choose a private insurance plan if their property was in an area where the NFIP mandates flood insurance coverage. Furthermore, new surveying technology and flood risk models improved private insurers’ ability to predict floods, enabling them to better assess risk. Institutional investors provided large amounts of capital, which further facilitated the return of private insurers to the flood insurance market. These factors have allowed private insurance to grow to roughly five

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78. See id. (discussing geographic flood risk).
79. See id. (highlighting speculative nature of offering flood insurance).
80. See 42 U.S.C. § 4001(a) (classifying consumer protection as one reason for enacting NFIP).
82. 42 U.S.C. § 4012a(b)(1)(B) (authorizing applicable private flood insurance policies in lieu of NFIP coverage). For a private insurance plan to qualify, the plan must at least cover “the outstanding principal of the loan or the maximum limit of coverage” under the NFIP, whichever is less. Id. § 4012a(b)(1)(A) (identifying requirements of applicable private flood insurance plans). For a further discussion of when the NFIP mandates that property owners purchase flood insurance, see infra notes 100-06 and accompanying text.
83. See INTRODUCTION, supra note 17, at 9-10 (observing increase in consumer choice); see also Frank, supra note 81 (examining privatization of flood insurance).
84. See Pat Howard, Private Flood Insurance vs NFIP, POLICYGENIUS (July 16, 2019), https://www.policygenius.com/homeowners-insurance/private-flood-insurance-vs-nfip/ (assessing technological advancements in flood insurance market); see also Frank, supra note 81 (noting progress of risk-modeling companies).
85. See Frank, supra note 81 (analyzing role of increased investment in private insurance companies).
percent of the flood insurance market, with continued growth likely.86

III. THE NFIP IN ACTION: THE CURRENT FRAMEWORK OF PUBLIC FLOOD INSURANCE IN THE UNITED STATES

Congress authorized the Federal Emergency Management Agency (FEMA) to regulate and administer the NFIP.87 As of September 30, 2020, the NFIP owed over twenty billion dollars to the United States Treasury.88 The NFIP has over five million active policies, representing roughly $1.3 trillion in flood insurance coverage.89 The average annual premium charged is $730, which translates to revenues of roughly $3.4 billion per year.90

A. Availability of NFIP Coverage

To purchase flood insurance under the NFIP, the property must be located in a participating community’s jurisdiction.91 A community is "a [s]tate or political subdivision” with jurisdiction over zoning and building codes in particular areas.92 Congress does not require communities to participate in the NFIP.93 A community participating in the NFIP, however, must adhere to a set of minimum standards.94 The NFIP intended these legally imposed standards to reduce new land development, mitigate flood damage, and improve current land management in flood-prone areas.95 These objectives are consistent with the NFIP’s goal of reducing the overall risk that flood damage poses to property owners.96

86. Id. (evaluating growth of private insurance); see also Howard, supra note 84 (discussing growth of private insurance in flood insurance market).
87. 42 U.S.C. § 4011(a) (noting FEMA’s authority to regulate NFIP).
89. See id. (highlighting extent of NFIP coverage).
90. See id. (analyzing NFIP financial statements).
91. See INTRODUCTION, supra note 17, at 8 (delineating requirements to purchase national flood insurance).
93. INTRODUCTION, supra note 17, at 2 (observing choice that communities have).
94. 42 U.S.C. § 4012(c) (requiring communities to follow standards to participate in NFIP).
95. Id. (listing minimum standards).
96. See id. § 4001(a) (identifying preventative and protective measures as goal of NFIP).
State and local governments enforce minimum floodplain management standards. The standards often translate into regulations, such as requiring development permits for flood-prone areas, mandating buildings in flood-prone areas to raise their lowest floor to safe levels, and necessitating specific construction materials and methods to mitigate flood risk. Communities should consider these standards as a baseline because they may adopt more stringent measures to reduce flood risk.

Despite communities having discretion to participate in the NFIP, Congress requires certain property owners to purchase NFIP flood insurance. Under the NFIP, any property owner who is located in a special flood hazard area (SFHA) and seeks to acquire, increase, extend, or renew a mortgage backed by a federally regulated lending institution must purchase flood insurance as a precondition to the loan. A SFHA is subject to a one percent or greater risk of flooding every year. The purpose of the mandatory mortgage purchase requirement is to “increase compliance with flood insurance requirements and participation in the NFIP.” Moreover, the requirement helps alleviate the financial burden on the government by ensuring property owners, who assume the risk of flood damage, pay their share of insurance coverage. In 2012, Congress amended the mandatory mortgage purchase requirement to allow qualifying private flood insurance to satisfy the statutory requirement. Although this amendment un-

97. INTRODUCTION, supra note 17, at 6-7 (noting communities’ role in enforcing NFIP minimum standards).
98. Id. (providing examples of regulation meeting NFIP minimum floodplain management standards).
99. See id. at 7 (acknowledging communities’ right to impose stricter preventative measures).
100. Id. at 9 (determining when property owners are required to purchase flood insurance).
103. Lending, supra note 101, at 6.1 (discussing rationale of requiring property owners to purchase flood insurance).
104. See id. (analyzing benefits of mandatory mortgage purchase requirement).
105. See 42 U.S.C. § 4012a(b)(1)(B) (codifying property owners’ ability to meet statutory requirement with private flood insurance); see also Lending, supra
dercuts the goal of increasing consumer participation in the NFIP, it provides consumers with the ability to shop for a flood insurance policy that is more suited to their needs.106

B. Reducing Flood Risk

An overarching policy goal of the NFIP is to lower the overall risk that flood damage will occur.107 One way the NFIP attempts to achieve this goal is by conditioning participation in the program on the adoption of minimum standards of floodplain management.108 Another way the NFIP attempts to accomplish this goal is by developing Flood Insurance Rate Maps (FIRMs) and enacting flood-prevention policies based on those maps.109 FIRMs are “official community maps” that identify SFHAs, assess flood risk, and establish risk premium zones.110 As such, FIRMs represent an important resource for both FEMA and property owners.111

The NFIP charges FEMA with “identify[ing] and publish[ing] information” related to flood-risk locations in the United States.112 The NFIP requires FEMA to update its flood risk information and estimate the potential flood-related loss in identified at-risk zones.113 FEMA fulfills this duty by publishing FIRMs.114 FEMA uses the data collected in FIRMS to assess flood risk and price premiums, as well as to determine which property owners must purchase NFIP flood insurance.115 Property owners utilize FIRMs

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106. See Howard, supra note 84 (explaining benefits tied to variety of flood-insurance policies available for consumers).
107. See 42 U.S.C. § 4001(a) (outlining purpose of NFIP). For a further discussion of the purpose of the NFIP, see supra notes 35-42 and accompanying text.
108. See 42 U.S.C. § 4012(c) (requiring adoption of minimum floodplain management standards as precondition to NFIP flood insurance availability).
109. See INTRODUCTION, supra note 17, at 3 (highlighting NFIP measures to accomplish policy goals).
113. Id. § 4101(a)(2) (providing additional responsibilities for FEMA).
114. See INTRODUCTION, supra note 17, at 3 (explaining purpose of FIRMs).
115. See id. (observing FEMA’s use of FIRMs).
to inform property purchasing decisions and evaluate their own level of flood risk.\textsuperscript{116}

The NFIP requires FEMA to assess the need to update FIRMs at least once every five years.\textsuperscript{117} Furthermore, FEMA updates its FIRMs if it deems an update necessary after review or upon request from a participating community.\textsuperscript{118} A participating community must have sufficient supporting data and the necessary funding for FEMA to update its FIRMs upon request.\textsuperscript{119} Therefore, while the NFIP instructs FEMA to assess the need to update its flood maps, it is not obligated to unless a state or local government makes a valid request.\textsuperscript{120}

As a result, FIRMs across the country “vary considerably in age and in quality.”\textsuperscript{121} FEMA tracks the need to update its maps with its Coordinated Needs Management Strategy.\textsuperscript{122} This process analyzes the flood hazard lifecycle and prioritizes which FIRMs need updating.\textsuperscript{123} FIRMs may become out of date when changes to the “topography, hydrology, [or] land development” occur in any given area.\textsuperscript{124} Congress established the Technical Mapping Advisory Council (Council) to advise FEMA on how to best produce FIRMs.\textsuperscript{125} The Council estimates that FEMA takes an average of three to five years to create new FIRMs, which is much higher than the Council’s recommended timeline of twenty-five months.\textsuperscript{126}

State and local governments use the most up-to-date FIRMs available to enact policies that meet the NFIP’s minimum floodplain management standards.\textsuperscript{127} Communities enforce the policies

\begin{itemize}
\item \textsuperscript{116} See id. (noting consumer benefits of using FIRMS).
\item \textsuperscript{117} 42 U.S.C. § 4101(e) (outlining FEMA deadlines to review FIRMs).
\item \textsuperscript{118} See id. § 4101(f) (delineating when FEMA must update FIRMs).
\item \textsuperscript{119} Id. (listing requirements necessary for participating community to obligate FEMA to update FIRMs).
\item \textsuperscript{120} Id. (noting while duty to update maps is usually discretionary, it is obligatory upon state or local government request).
\item \textsuperscript{121} Introduction, supra note 17, at 4 (explaining qualitative difference in FIRMs across country).
\item \textsuperscript{123} Id. (discussing methodology of updating FIRMs).
\item \textsuperscript{124} Id. (enumerating different causes that affect FIRM validity).
\item \textsuperscript{125} 42 U.S.C. § 4101a(a), (c) (establishing Council and listing Council’s duties).
\item \textsuperscript{126} Introduction, supra note 17, at 5-6 (discussing disparity between Council’s recommendations and FEMA’s practices).
\item \textsuperscript{127} See id. at 6-7 (analyzing how communities develop floodplain management policies).
\end{itemize}
themselves, as opposed to FEMA or another federal agency.\textsuperscript{128} FEMA does, however, monitor compliance by conducting community assistance visits to compile data on enforcement.\textsuperscript{129} To help incentivize floodplain management, FEMA offers state and local governments monetary awards through its Flood Mitigation Assistance Grant Program.\textsuperscript{130} Participating communities become eligible to receive benefits under the program by undertaking projects that “reduce or eliminate the risk of repetitive flood damage to buildings insured by the [NFIP].”\textsuperscript{131} Examples of these projects include floodproofing buildings, acquiring repetitive loss properties, and elevating flood-prone land.\textsuperscript{132}

C. Public Flood Insurance Policies

FEMA has broad discretion in creating flood insurance policies.\textsuperscript{133} Congress granted FEMA the authority to select the types of properties that are eligible for flood insurance, as well as to determine what the policy covers, limitations on coverage, and the price of premiums and deductibles.\textsuperscript{134} FEMA created three different types of standard insurance policies: “[T]he Dwelling, the General Property, and the Residential Condominium Building Association” policies.\textsuperscript{135} These policies contain two different types of coverage — building coverage and contents coverage.\textsuperscript{136} Building coverage includes damage to the building structure itself, while contents coverage protects various personal belongings and other items damaged within a building.\textsuperscript{137} Individuals may purchase contents coverage separately from building coverage.\textsuperscript{138} Certain costs of flood damage are not included in any type of flood insurance cover-

\textsuperscript{128.} Id. at 7 (discussing community floodplain management enforcement).
\textsuperscript{129.} Id. (evaluating FEMA oversight over enforcement standards).
\textsuperscript{130.} See id. at 8 (outlining purpose of FEMA grant program).
\textsuperscript{132.} See Introduction, supra note 17, at 8 (listing examples of qualifying projects).
\textsuperscript{133.} See 42 U.S.C. § 4013(a) (identifying FEMA’s authority to determine bounds of flood insurance coverage).
\textsuperscript{134.} See id. (listing extent of FEMA’s authority).
\textsuperscript{135.} Introduction, supra note 17, at 8 (identifying three standardized flood insurance policies).
\textsuperscript{137.} Id. (listing what is covered by building and contents coverage).
\textsuperscript{138.} Id. (examining bounds of content coverage).
age, such as living expenses from temporary housing, “financial losses caused by business interruption,” and damages to property outside of a building.  

Preferred Risk Policies are also available for properties that are not located within a SFHA. These policies use the same forms and offer the same coverage as the Standard Flood Insurance Policies but are offered at a lower price to reflect the lower risk. FEMA encourages property owners to purchase Preferred Risk Policies to help protect the financial interests of uncovered property owners who suffer flood damage and increase the policy base to help secure the NFIP’s financial soundness.

The amount of coverage each policy provides depends on the type of coverage and the amount of people living in the covered building. Under a Dwelling Form policy, which applies to a residential property of one to four people, the maximum building coverage available is $250,000 and the maximum contents coverage is one hundred thousand dollars. Although the NFIP caps the amount at $250,000, policy owners can purchase additional flood coverage through private insurers.

The NFIP authorized FEMA to price insurance premiums based on “the risk involved and accepted actuarial principles.” This involves calculating the flood risk and quoting a price based on that risk. FEMA evaluates a structure’s risk by examining its flood zone in the FIRM, assessing the elevation of the structure, and a combination of other factors. Pricing of premiums, however, is also affected by various subsidies FEMA offers to policy holders.

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139. Id. at 3 (identifying exclusions from all forms of flood insurance coverage).
140. See Introduction, supra note 17, at 12 (discussing nature of Preferred Risk Policies).
141. Id. at 9 (comparing Preferred Risk Policies to Standard Flood Insurance Policies).
142. Id. at 9 (explaining FEMA’s purpose in offering Preferred Risk Policies).
143. Id. at 9 (examining maximum coverage under all policies).
145. See Introduction, supra note 17, at 9 (noting alternatives for purchasing additional flood insurance coverage).
147. Introduction, supra note 17, at 15 (explaining FEMA pricing methodology).
148. Id. at 15-16 (examining how FEMA evaluates risk).
149. See id. (noting effect subsidies have on actuarial pricing principles).
The NFIP authorizes FEMA to discount premium pricing to “encourage prospective insureds to purchase flood insurance.”

Flood insurance subsidies effectively lower the price of insurance for property owners and shift away from actuarial pricing. Currently, three different types of NFIP subsidies exist for different categories of property: “[P]re-FIRM properties, newly mapped properties, and grandfathered properties.”

The Pre-FIRM subsidy applies to properties built before 1975 or before FEMA published the first FIRM for the community where the property lies, whichever is later. The policy’s purpose is to prevent pre-existing properties from being penalized but enable them to contribute to the financial burden of flood insurance. “As of March 2017, approximately 16.1% of all NFIP policies received a pre-FIRM subsidy.”

The newly mapped subsidy applies to properties recently mapped into a SFHA by an updated flood map. This subsidy helps property owners pay their new premiums by initially offering a subsidized rate that increases over time. After the first year, the newly mapped subsidy rate begins to increase annually at a rate of no greater than eighteen percent until it matches a full-risk rate. Currently, only four percent of properties receive this type of subsidy.

Grandfathered rates apply when a property that is already located in a SFHA and adheres to all NFIP regulations is remapped into a new flood rate class. Despite the higher actuarial rate of the policy, this subsidy allows the property owner to pay premiums...
based on a lower rate.\footnote{161} As of September 2018, roughly nine percent of NFIP policy holders took advantage of these lower rates.\footnote{162}

IV. **How the NFIP May Begin to Manage Its Debt Problem**

Congress enacted the NFIP to meet two clear goals: (1) to provide affordable flood insurance in flood-prone areas and (2) to reduce the cost of flood damage by mapping flood-risk areas and funding flood-mitigation projects.\footnote{163} FEMA’s administration of the NFIP, however, has failed to meet these goals.\footnote{164} Notably, FEMA has been unable to effectively update its flood maps or enforce its flood mitigation programs targeted at severe repetitive loss properties.\footnote{165}

A. **Accurate Flood Mapping**

The greatest criticism that FEMA faces in administering the NFIP is its enforcement and maintenance of FIRMs.\footnote{166} Under the NFIP, FEMA must assess the necessity to update a FIRM at least once every five years.\footnote{167} Nothing, however, obligates FEMA to substantively update these flood maps, which has caused a great disparity in the accuracy and age of these maps across the country.\footnote{168}

A large body of evidence suggests that many FEMA flood maps are not up to date.\footnote{169} According to a 2020 flood map study, nearly

\footnote{161. See Reforming the NFIP, supra note 152, at 5 (describing grandfathered subsidy rates).}

\footnote{162. Introduction, supra note 17, at 19 (reporting how many NFIP policy holders have grandfathered premium rates).}

\footnote{163. Id. at 2 (outlining general purpose of NFIP); see also 42 U.S.C. § 4001(a) (listing purpose of NFIP).}

\footnote{164. See Walsh, supra note 16 (discussing how NFIP has many logistical issues).}

\footnote{165. For a further discussion of FEMA’s administrative issues, see infra notes 166-200 and accompanying text.}

\footnote{166. U.S. DEP’T OF HOMELAND SEC., FEMA NEEDS TO IMPROVE MANAGEMENT OF ITS FLOOD MAPPING PROGRAMS 3 (2017) [hereinafter Flood Mapping], https://www.oig.dhs.gov/sites/default/files/assets/2017/OIG-17-110-Sep17.pdf (finding deficiencies in FEMA’s handling of flood mapping responsibilities).}

\footnote{167. 42 U.S.C. § 4101(e) (requiring FEMA to review FIRMs at least once every five years).}

\footnote{168. See Introduction, supra note 17, at 4 (discussing variability in age and accuracy of flood maps). For a further discussion of flood maps, see supra notes 107-26 and accompanying text.}

six million more homes are considered at risk than current FEMA maps convey.\textsuperscript{170} Moreover, FEMA is far from meeting its own flood map goals.\textsuperscript{171} A Department of Homeland Security (DHS) investigation found that FEMA’s flood maps are only forty-two percent up to date, falling significantly short of FEMA’s eighty percent goal.\textsuperscript{172}

FIRMs and other flood maps are an integral part of administering flood insurance policies; without them, there is no accurate way to determine which properties are at risk of flooding or to calculate the rate for premiums.\textsuperscript{173} Recommendations to improve flood mapping include replacing FEMA’s current oversight initiatives with predictive flood models that account for variables such as rising sea levels.\textsuperscript{174} Additionally, depoliticizing the role of flood maps may also increase risk-assessment accuracy.\textsuperscript{175} Currently, local lawmakers have an incentive to challenge the adequacy of flood maps because understating flood risk lowers insurance premiums for constituents and eliminates potential restrictions on local development.\textsuperscript{176}

The NFIP can increase its policy base and become more cost-effective by regularly enforcing and updating these flood maps.\textsuperscript{177} The NFIP aims to keep premium prices reasonable so that flood insurance is widely available.\textsuperscript{178} As a result, the NFIP relies on a

\begin{enumerate}
\item[170.] See Flavelle et al., supra note 169 (evaluating 2020 flood study).
\item[171.] See Flood Mapping, supra note 166 (observing FEMA’s failure to meet its own flood map goals).
\item[172.] \textit{Id.} (highlighting disparity in FEMA’s attainment).
\item[173.] See Scata, supra note 169 (analyzing importance of FEMA’s flood mapping function).
\item[174.] See \textit{id.} (advocating for new flood mapping practices); see also Flood Mapping, supra note 166, at 11 (endorsing FEMA oversight changes).
\item[176.] See Pralle, supra note 175 (discussing effects of politicization); see also Flavelle et al., supra note 169 (noting impact of politics on flood map accuracy).
\item[177.] See Reforming the NFIP, supra note 152, at 10 (analyzing methods to increase NFIP participation).
\item[178.] See \textit{id.} at 9 (discussing policy rationale behind low premiums).
\end{enumerate}
large premium base to generate revenue. By timely updating flood maps, FEMA can effectively identify more consumers that live in flood-risk areas. This not only helps the program generate revenue, but it also offers insurance to property owners who would otherwise not be covered in the event of a flood disaster.

B. Repetitive Loss Properties

Another major problem that the NFIP faces is paying for repetitive loss property and severe repetitive loss property claims. Under the NFIP, a repetitive loss property is a property subject to flood-related damage on at least two occasions, with damages totaling at least twenty-five percent of the building’s value during each flooding event. The NFIP defines severe repetitive loss properties as properties that incurred flood damage at least four times with the amount of each claim totaling over five thousand dollars or the cumulative claims totaling over twenty thousand dollars. The NFIP also classifies a property as a severe repetitive loss property if the property owner made at least two flood claims that exceeded the property’s full value.

Repetitive loss properties and severe repetitive loss properties make up only two percent of active NFIP policies, yet they “account[ ] for approximately . . . 16% of total claims.” This disparity causes the NFIP to pay more in claims for repetitive loss properties than the properties are worth. This untenable result conflicts with the NFIP’s overarching goal of mitigating flood risk.

In a recent audit, DHS determined that FEMA has not “adequately manag[ed] [severe repetitive loss] properties covered by

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179. See INTRODUCTION, supra note 17, at 23 (discussing NFIP’s main sources of revenue).
180. See Scata, supra note 169 (noting importance of updating maps).
181. Id. (reasoning benefits of updated maps).
182. See REFORMING THE NFIP, supra note 152, at 15 (analyzing need for reform).
184. Id. § 4014(h) (defining severe repetitive loss properties).
185. Id. (classifying additional severe repetitive loss properties).
186. REFORMING THE NFIP, supra note 152, at 15 (analyzing extent of repetitive loss property cost).
188. See 42 U.S.C. § 4001(a) (listing purpose of NFIP).
NFIP.” The report found that FEMA does not maintain accurate data regarding severe repetitive loss properties, and its flood mitigation efforts for these properties provide “neither equitable nor timely relief.” Specifically, the audit established that seventy-three percent of properties listed as severe repetitive loss properties had not completed any flood-mitigation work. The report recommended that FEMA revamp its community outreach program to address the pressing needs of severe repetitive loss properties. Moreover, DHS recommended that FEMA increase the availability of grants and develop a transparent plan to enforce flood-mitigation efforts.

FEMA could further offset the cost of severe repetitive loss properties by increasing the availability of property buyouts. According to FEMA data, “[T]hese properties routinely flood every two to three years.” The cost of continually repairing and mitigating flood damage eventually outweighs its benefits. Instead of purchasing at-risk flood homes, FEMA allocates more of its funds toward repairs. Since 2000, FEMA has spent an estimated $46.6 billion on flood repairs, while only providing $804 million to purchase flood-risk properties. FEMA should seize the opportunity to buy severe repetitive loss properties from willing property owners.

190. Id. (discussing audit’s findings).
191. Id. at 2 (highlighting lack of flood-mitigation efforts for severe repetitive loss properties).
192. Id. at 15 (recommending severe repetitive loss property solutions).
193. Id. (endorsing further mitigation strategies).
195. Id. at 3 (discussing rate of flooding).
196. See id. (analyzing economics of continually repairing flood-prone properties).
197. Id. at 4 (observing FEMA’s routine practice).
198. Id. (comparing fund distribution).
199. See Moore, supra note 194, at 3 (discussing need to purchase more at-risk repetitive loss properties); see also Walsh, supra note 16 (noting need of FEMA buyout programs).
but it would also save money in the long run over claims on repetitive loss properties that it does not have to pay to repair. 200

V. THE IMPACT OF THE NFIP

Millions of property owners rely on the NFIP for affordable flood insurance coverage that would not exist otherwise. 201 The current program appears to be on the verge of unsustainability. 202 Poor management, an increase in powerful tropical storms, and rising sea levels have left the program with over twenty billion dollars in debt. 203 Immediate changes to the NFIP will not only lower its debts, but will continue to offer affordable flood insurance to property owners who rely on the program. 204

The increasing frequency of strong hurricanes and tropical storms due to climate change may leave the NFIP one major hurricane away from requiring another multi-billion-dollar bailout. 205 Although natural disasters are beyond its control, FEMA can immediately implement various measures to make the NFIP a more comprehensive and cost-effective government program. 206 By updating flood maps to reflect flood risk more accurately in the United States, FEMA can better inform property owners and increase the NFIP’s policy base. 207 Moreover, FEMA may address flood damage actively through mitigation measures to reduce the overall cost of the program in the long run. 208

200. See Moore, supra note 194, at 4 (explaining benefits of buyout program).
201. See THE WATERMARK, supra note 88 (noting millions of NFIP policies in force).
202. See Walsh, supra note 16 (describing NFIP as “broke and broken”).
203. See id. (explaining main issues facing NFIP); see also INTRODUCTION, supra note 17, at 27 (noting impossibility of NFIP, as currently structured, to pay off its debt in ten years).
204. For a further discussion of issues faced by the NFIP, see supra notes 163-200 and accompanying text.
205. For a further discussion of the role of climate change on the NFIP’s future, see supra notes 49-71 and accompanying text.
206. See FLOOD MAPPING, supra note 166, at 11 (noting necessary changes to FEMA’s flood map updating procedure); see also NOT EFFECTIVELY ADMINISTERING, supra note 189, at 15 (advocating for changes to FEMA’s severe repetitive loss property policies).
207. See Scata, supra note 169 (demonstrating benefits of current flood maps). For a further discussion on the benefits of up-to-date flood maps, see supra notes 166-81 and accompanying text.
208. See Moore, supra note 194, at 2 (observing benefits of proactive flood mitigation policies).
Flood-risk management is not an issue that will simply fade away if ignored.\textsuperscript{209} As climate change persists, flood disasters will affect more property owners.\textsuperscript{210} If Congress discontinued the NFIP in favor of ad hoc disaster relief bills or a private insurance takeover, millions of property owners would lose affordable flood insurance.\textsuperscript{211} Although the NFIP may never be profitable, it certainly serves an important function.\textsuperscript{212} The future efficacy of the NFIP requires immediate changes to shed its outstanding debt.\textsuperscript{213}

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\textsuperscript{209} See Flavelle et al., supra note 169 (noting flood risks are much more widespread than currently reported).

\textsuperscript{210} See Risky Business, supra note 7, at 4 (assessing increasing threat of coastal storm flooding); see also Lindsey, supra note 59 (discussing future projections of rising sea levels).

\textsuperscript{211} See Introduction, supra note 17, at 2 (observing NFIP legislative intent to protect property owners and reduce financial burden of disaster relief).

\textsuperscript{212} See id. at 26 (noting NFIP’s ability to cover its own costs prior to 2005).

\textsuperscript{213} See Walsh, supra note 16 (discussing importance of NFIP reform).

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