

Treading Water: How to Fix the National Flood Insurance Program

SPENCER HARRIS*

ABSTRACT

The National Flood Insurance Program was created in 1968 to insulate Americans from property damage due to flooding. In the years since, the Program became part of the problem it was supposed to solve. Mismanagement and miscalculation of risk, coupled with increasing flood likelihood due to climate change and other factors, have turned the NFIP into a liability. The Program has misled property owners as to their property's true risk and has created a system that disproportionately affects certain groups, such as the elderly. This Note offers a solution, showing how the Program can fix its calculation of risk, communicate that risk to all relevant parties, and invest in projects that will reduce overall flood risk.

TABLE OF CONTENTS

Introduction	382
I. The Flood Problem is Growing from Multiple Angles	383
A. Population Growth in Flood Areas	383
B. Geographic Growth of Flood Areas	384
C. Other Factors Contributing to Increased Flooding	386
II. The Current Flood Insurance System is Ineffective.	387
A. The Biggert-Waters Act.	388
B. The Homeowner Flood Insurance Affordability Act of 2014	389
C. Risk Rating.	390
D. Risk Rating 2.0	391
E. Options for Premium Reduction for Policyholders	393
F. Disproportionate Effect of NFIP Policies	395
III. Proposed Changes	397
A. Suggested Improvements to Risk Rating 2.0	398
B. Suggested Improvements to the FMA Program	399
C. Additional Proposals	401
D. Methods of Funding	402
Conclusion	403

* Spencer Harris is a graduate of University of Illinois College of Law, J.D. 2024. Special thanks to Professor Heidi Hurd for her endless support and guidance, and Brian Kerschner for his insight into Catastrophe Analysis. © 2025, Spencer Harris.

INTRODUCTION

Jane and Del Compton retired to the Florida coast.¹ They dreamt of spending their twilight years along the ocean in the idyllic climate of the panhandle.² That dream turned into a nightmare when Hurricane Ian tore through the Gulf side of Florida on September 28, 2022, turning their post-career paradise into a disaster site.³ The Comptons had no insurance and were forced to abandon their property.⁴

The Comptons' story is alarmingly common.⁵ In the Florida counties most affected by Hurricane Ian, "fewer than 1 in 5 homes [had] flood insurance."⁶ Although properties near coasts and streams are increasingly exposed to more frequent and intense flooding, they are still a preferred destination for Americans to live. The federal government sought to reduce the financial vulnerability of property owners in flood-prone areas by implementing the National Flood Insurance Program (NFIP).⁷ Perversely, the NFIP has had the opposite effect.⁸ Years of NFIP mismanagement and miscalculation of risk have incentivized development in flood-prone areas.⁹ Political pressures have driven lawmakers to compromise on the fundamentals of the program to the point of dysfunction, further driving away policyholders and thereby reducing the risk pool.¹⁰ Add to that an increase in flood likelihood due to climate change and other factors, and you get a massive financial liability for policyholders and the U.S. government.¹¹

There are opportunities to fix the NFIP. Some steps the government can take to create a functional insurance program include 1) purposefully choosing what properties to cover and how much to charge for that coverage, 2) accurately calculating risk and disclosing that risk to all relevant parties, and 3) funding and supporting community infrastructure projects. Many of these changes can be

1. Emily Cochrane & Julie Bosman, *'Our Bubble Has Been Burst': Older Storm Victims Face an Uncertain Future*, N.Y. TIMES (Oct. 10, 2022), <https://perma.cc/H4UF-7VP5>.

2. *Id.*

3. *Id.*

4. *Id.*

5. *See id.*

6. Christopher Flavelle, *Hurricane Ian's Toll Is Severe. Lack of Insurance Will Make It Worse.*, N.Y. TIMES (Sept. 29, 2023), <https://perma.cc/H3YJ-W6UB>.

7. *See About Us*, NAT'L FLOOD INS. PROGRAM, <https://perma.cc/VEF2-WQR7> (last visited Mar. 28, 2025) ("Created by Congress in 1968, the National Flood Insurance Program (NFIP) provides insurance to help reduce the socio-economic impact of floods. Flood insurance is a separate policy that can cover buildings, the contents in a building, or both. The NFIP provides flood insurance to property owners, renters, and businesses"); *see generally* Scott Gabriel Knowles & Howard C. Kunreuther, *Troubled Waters: The National Flood Insurance Program in Historical Perspective*, 26 J. POL'Y HIST. 327 (2014).

8. *See* Cochrane & Bosman, *supra* note 1.

9. UNION OF CONCERNED SCIENTISTS, *OVERWHELMING RISK: RETHINKING FLOOD INSURANCE IN A WORLD OF RISING SEAS* 1 (2014), <https://perma.cc/QV4G-BPF9>.

10. *See id.* at 7.

11. *See id.* at 9.

made without eliminating the entire program and instead changing priorities within the framework of the existing system.

I. THE FLOOD PROBLEM IS GROWING FROM MULTIPLE ANGLES

Flooding has always been a problem. Historically, people settled near bodies of water because this was the only way to access an essential resource for drinking, irrigation, transportation, and waste removal.¹² Though technology has eliminated some of the need to live close to water, that necessity has been replaced with the desire to live near water for recreation and aesthetics.¹³ As a consequence, population, density, and property values have grown in flood-prone areas.

Several pieces of legislation have helped communities prepare for and mitigate flood risks.¹⁴ The Flood Control Act of 1917¹⁵ authorized spending to construct levees along flood-prone rivers.¹⁶ Further legislation, such as the Flood Control Act of 1928¹⁷ and the Flood Control Act of 1936,¹⁸ expanded the scope of funding to support the construction of spillways and river channel improvement.¹⁹ Despite these efforts, flooding continues to pose enormous risks to the health and wealth of Americans.²⁰ In fact, the risks have gotten worse. Over time, flooding has become more intense, unpredictable, and destructive, and the future of flood-prone communities is uncertain.²¹

A. POPULATION GROWTH IN FLOOD AREAS

Property density and value in flood-prone areas, and the associated risk of loss, are growing.²² The number of people living in Atlantic, Pacific, and Gulf Coast counties “grew from 47 million in 1960 to 87 million in 2008.”²³ The average density of the population in these areas has doubled since 1960, from 250 people per square mile to almost 500 people per square mile in 2018.²⁴ The number of

12. YU FANG & JAMES W. JAWITZ, NATURE COMM'NS, THE EVOLUTION OF HUMAN POPULATION DISTANCE TO WATER IN THE USA FROM 1790 TO 2010 2 (2019).

13. *Id.*

14. See A CHRONOLOGY OF MAJOR EVENTS AFFECTING THE NATIONAL FLOOD INSURANCE PROGRAM, AM. INSTS. FOR RSCH. (2005), <https://perma.cc/8H64-CJ96>.

15. Ransdell-Humphreys Flood Control Act of 1917, Pub. L. No. 64-367, 39 Stat. 948 *et seq.*

16. FED. EMERGENCY MGMT. AGENCY (FEMA), HISTORY OF LEVEES 1 (2020), <https://perma.cc/XR4S-6PGH>.

17. Flood Control Act of 1928, Pub. L. No. 70-391, 45 Stat. 534 *et seq.* (codified at 33 U.S.C. § 702a).

18. Flood Control Act of 1936, Pub. L. No. 74-738, 49 Stat. 1570 *et seq.*

19. *Id.*

20. *America's Flooding Problem*, FLOOD DEFENDERS, <https://perma.cc/A2S2-FPC6> (last visited Mar. 28, 2025).

21. See *Weather-Related Disasters Increase over Past 50 Years, Causing More Damage but Fewer Deaths*, WORLD METEOROLOGICAL ORG. (Aug. 31, 2021), <https://perma.cc/497P-WL9T>.

22. UNION OF CONCERNED SCIENTISTS, *supra* note 9, at 4.

23. *Id.*

24. *Id.*

housing units to accommodate that population has more than doubled “from 16.1 million in 1960 to 36.3 million in 2008.”²⁵ These are typically valuable properties. For example, the relatively small area of the coastal counties along the Gulf and East Coast accounts for 16% of the property value for the entire United States.²⁶ As population, housing density, and property values increase in these communities, the stakes have risen for managing floods.²⁷

B. GEOGRAPHIC GROWTH OF FLOOD AREAS

Areas that never used to flood are now at risk.²⁸ Along rivers, floodplain area is expected to grow by “45% by the year 2100.”²⁹ The median percentage of coastal areas where the mandatory purchase of flood insurance applies is projected to increase by “about 55% by the year 2100.”³⁰ The value of present-day assets in floodplains is “\$5.5 trillion, with \$1.2 trillion of this at potential risk from flood damage,” and increasing population coupled with expanding flood areas will only exacerbate this problem.³¹

The main driver for increased flood risk is climate change.³² The effect of climate change on flooding is most pronounced on the coasts, where rising sea levels—caused by melting polar ice and the expansion of water as it warms—have increased coastal flooding.³³ Since 1993, the “average sea level has risen at a rate of 0.12 to 0.14 inches per year,” twice as fast as the average from 1880 to 2013.³⁴ Experts predict that the “sea level along the U.S. coastline will rise 10 to 12 inches by 2050.”³⁵ Though some areas will become permanently submerged, even more common will be increased destruction on days with seasonal high tides or large storms.³⁶ Existing infrastructure and mitigation strategies designed to address prior flood patterns are

25. STEVEN G. WILSON & THOMAS R. FISCHETTI, COASTLINE POPULATION TRENDS IN THE UNITED STATES: 1960 TO 2008 16 (2010), <https://perma.cc/8VTV-SK5G>.

26. AIR WORLDWIDE, THE COASTLINE AT RISK: 2016 UPDATE TO THE ESTIMATED INSURED VALUE OF U.S. COASTAL PROPERTIES 4 (2016), <https://perma.cc/6XPK-KTD5>.

27. See UNION OF CONCERNED SCIENTISTS, *supra* note 9, at 3–4.

28. See *Why Are Floods Hitting More Places and People?*, ENV’T DEF. FUND, <https://perma.cc/H9D2-2J6J> (last visited Mar. 25, 2025).

29. AECOM, THE IMPACT OF CLIMATE CHANGE AND POPULATION GROWTH ON THE NATIONAL FLOOD INSURANCE PROGRAM THROUGH 2100 ES-6–ES-7 (2013), <https://perma.cc/A668-WVRM>.

30. *Id.* at ES-7.

31. Oliver E. J. Wing et al., *Estimates of Present and Future Flood Risk in the Conterminous United States*, in 13 ENV’T RSCH. LETTERS 3 (2018), <https://perma.cc/79G9-JD2T>.

32. See AECOM, *supra* note 29, at ES-6–ES-7. But see Ashish Sharma et al., *If Precipitation Extremes Are Increasing, Why Aren’t Floods?*, 54 WATER RES. RSCH. 8545, 8545 (2018), <https://perma.cc/DW9K-6TK7>.

33. *Climate Change Indicators: Coastal Flooding*, EPA, <https://perma.cc/3LHR-8K4W> (last visited Mar. 28, 2025).

34. *Climate Change Indicators: Sea Level*, EPA, <https://perma.cc/TK5M-PGHF> (last visited Mar. 28, 2025).

35. *Id.*

36. *Id.*

becoming ineffective,³⁷ leading to false confidence in the flood resilience of specific properties, partially contributing to the continual rebuilding of many flood-affected properties.³⁸

Additionally, rising temperatures are making storms more powerful.³⁹ Warmer oceans allow developing hurricanes to pull more moisture from the oceans, creating storms that grow faster and reach a higher intensity before landfall.⁴⁰ Every one-degree Celsius increase in atmospheric temperature allows the atmosphere to hold seven percent more moisture, increasing the amount of rainfall that hurricanes produce.⁴¹ This increases the risk that storm sewer and drainage systems designed to service pre-climate change weather patterns will overflow and cause flooding.⁴²

Climate change's effects on riverine flooding are less clear.⁴³ Of the forty-five percent expected increase in riverine flooding, "seventy percent of the changes may be attributed to the influence of climate change."⁴⁴ Though the duration of individual events of riverine flooding is expected to shorten, the magnitude of those floods is expected to increase, creating "flashier" flash floods that will be more destructive.⁴⁵ Climate change's effects on riverine flooding are also likely to be hyper-localized, with wildly varying outcomes in different parts of the country depending on many competing variables.⁴⁶ Counter-intuitively, experts predict that riverine flooding may decrease in places where rising temperatures create dryer soil because that soil will soak up excess water.⁴⁷ However, other climate-driven factors are expected to worsen flooding along rivers in other areas.⁴⁸ Changes in the strength and frequency of precipitation, streamflow dynamics, and the timing and size of snowmelt all affect how severe flooding will be in a particular area.⁴⁹ This increased volatility will make preparing for and predicting future flooding of riverine communities more difficult.⁵⁰

37. Katherine Bagley, *Thousands of Homes Keep Flooding, Yet They Keep Being Rebuilt Again*, YALE ENV'T 360 (Aug. 29, 2016), <https://perma.cc/EU6W-6UVJ>.

38. *Id.*

39. Elena Shao, Nadja Popovich & Mira Rojanasakul, *How Hurricane Ian Became So Powerful*, N.Y. TIMES (Sept. 30, 2022), <https://perma.cc/7QRV-AAKS>.

40. *Id.*

41. *Id.*

42. *Climate Adaptation and Stormwater Runoff*, EPA (Jan. 10, 2025), <https://perma.cc/FP7G-ZZES>.

43. See Manuela I. Brunner et al., *An Extremeness Threshold Determines the Regional Response of Floods to Changes in Rainfall Extremes*, 2 NATURE COMM'N EARTH ENV'T, no. 173, 2021, at 1.

44. See AECOM, *supra* note 29, at ES-6–ES-7.

45. Elena Shao, *Floods, Climate Change and the Future Forecast*, N.Y. TIMES (July 27, 2022), <https://perma.cc/5KE8-TA6J>.

46. See Brunner et al., *supra* note 43, at 1; STEPHEN A. NELSON, TULANE UNIV., RIVER SYSTEMS & CAUSES OF FLOODING 1 (2016), <https://perma.cc/EQQ5-FLV6> ("For example, heavy snow melts, water saturated ground, unusually high tides, and drainage modifications when combined with heavy rain can lead to flooding.").

47. Brunner et al., *supra* note 43, at 1.

48. EPA, CLIMATE CHANGE INDICATORS: RIVER FLOODING (2016), <https://perma.cc/9RWV-ATSM>.

49. *Id.*

50. *See id.*

C. OTHER FACTORS CONTRIBUTING TO INCREASED FLOODING

Though seventy percent of the growth in riverine floodplain size can be attributed to climate change, still thirty percent of the new risk is attributed to other human activities. Terrain modification, such as channelization, hard surface runoff, and wetland destruction also increase flood risk.⁵¹ Terrain modification increases flooding by changing where water can and cannot go after a weather event.⁵²

Channelization is “a method of river engineering that widens or deepens rivers to increase the capacity for flow volume at specific sections of the river.”⁵³ Though channelization helps the communities directly next to the channelized stream by controlling incoming and outgoing flood waters, it can worsen flooding downstream by increasing the flow rate and volume of the water, sending more water into downstream communities faster.⁵⁴ In response, the intentional removal of artificial channels in the form of stream restoration has become more common,⁵⁵ with some communities opting to remove dams or restore natural river banks.⁵⁶ Still, restoration is a slow and selective process, and most artificial channels remain in place.⁵⁷

Another type of terrain modification involves replacing absorbent surfaces with hard surfaces.⁵⁸ This includes “roads, houses, parking lots, and buildings” which do not absorb water like natural surfaces such as soil and sand.⁵⁹ An increase in the number of these surfaces increases “the peak discharge, volume, and frequency of floods . . . in nearby streams” because water is no longer being absorbed into the ground, and instead runs off into bodies of water, leading to greater flood risk to downstream areas.⁶⁰

Wetlands⁶¹ and mangrove forests⁶² also play a role in hydrologic systems. Wetlands are an effective flood abatement tool because “[a] one-acre wetland can typically store about three-acre feet of water, or one million gallons.”⁶³ In this way, wetlands function as temporary holding tanks for water from large

51. See AECOM, *supra* note 29, at 2–16.

52. *Id.*

53. *Flood Mitigation: Channelization*, CAN. WATERPORTAL (Nov. 29, 2013), <https://perma.cc/B3QW-24J5>.

54. *Id.*

55. E. S. Bernhardt et al., *Synthesizing U.S. River Restoration Efforts*, 308 SCI. 636, 636 (Apr. 29, 2005).

56. David E. Rheinheimer & Sarah M. Yarnell, *Tools for Sediment Management in Rivers*, in WATER FOR THE ENVIRONMENT 237, 256 (Avril C. Horne et al. eds., 2017).

57. See Bernhardt et al., *supra* note 55.

58. *Surface Runoff and the Water Cycle*, U.S. GEOLOGICAL SURV. (June 8, 2019), <https://perma.cc/6V8U-HPUE>.

59. *Id.*

60. *Id.*

61. EPA, WETLANDS: PROTECTING LIFE AND PROPERTY FROM FLOODING (2006), <https://perma.cc/U2GG-6TED>.

62. Pelayo Menéndez et al., *The Global Flood Protection Benefits of Mangroves*, 10 SCI. REPS. 4404, 4404 (2020).

63. EPA, *supra* note 61.

precipitation events. Wetlands, along with mangrove forests, also slow the speed of water moving downstream by giving water a place to store and then trickle out.⁶⁴ Unfortunately, development has destroyed wetland areas and mangrove forests while increasing channelization and hard surface runoff, exacerbating the effects of human infrastructure on flood intensity and volatility.⁶⁵

The recent Supreme Court opinion in *Sackett v. Environmental Protection Agency*⁶⁶ threatens to reduce the ability of the federal government to protect and manage wetlands.⁶⁷ In that case, the Sacketts were filling protected wetlands with gravel to build a vacation home when the EPA halted their work.⁶⁸ The Sacketts sued, arguing that their property was not within the EPA's jurisdiction because their property did not fall under the Clean Water Act's definition of "waters of the United States."⁶⁹ The previous definition included any wetland which has a "significant nexus" to an already protected body of water, whether visible or not.⁷⁰ The decision in *Sackett* narrowed that definition to include only wetlands with a surface water connection to an already protected body of water.⁷¹ The decision significantly reduces the number of wetlands protected by the Clean Water Act, which creates more vulnerability to an important element of flood abatement.

II. THE CURRENT FLOOD INSURANCE SYSTEM IS INEFFECTIVE

Most property owners have insurance to protect their real property from potential harm,⁷² but flood insurance is typically offered as a separate policy.⁷³ Since the Great Mississippi River Flood of 1927,⁷⁴ most private insurance companies ceased offering flood insurance after deciding that the financial risk of a costly flood event was not worth the potential profit.⁷⁵ Underinsured homeowners had few options. So, after Hurricane Betsy tore through the Gulf in 1965 and caused over a billion dollars in damage, Congress stepped in and created a public

64. Menéndez et al., *supra* note 62.

65. See AECOM, *supra* note 29, at ES-6–ES-7.

66. *Sackett v. EPA*, 598 U.S. 651, 678 (2023).

67. See David Jordan, *Supreme Court Ruling Will Force Changes to 'Waters of US' Rule*, ROLL CALL (May 25, 2023, 5:43 PM), <https://perma.cc/M6ZN-CEMN>.

68. See *Sackett*, 598 U.S. at 663.

69. *Id.*

70. See Jordan, *supra* note 67.

71. *Id.*

72. Maxime Croll, *Home Insurance Facts and Statistics: Coverage & Claims*, VALUEPENGUIN (Aug. 17, 2022), <https://perma.cc/YE2E-K3ZY>.

73. *Flood Insurance and Excess Flood Coverage*, S.C. DEP'T OF INS., <https://perma.cc/D7LJ-S4CY> (last visited Mar. 31, 2025).

74. *The Great Flood of 1927*, NAT'L GUARD, <https://perma.cc/UX6C-CJ7J> (last visited Mar. 31, 2025) ("The great Mississippi River flood of 1927 was one of the worst natural disasters in American history. It inundated 27,000 square miles, an area about the size of New England, killing as many as 1,000 people and displacing 700,000 more. At a time when the entire budget of the federal government was barely \$3 billion, the flood caused an estimated \$1 billion in damage.")

75. See Knowles & Kunreuther, *supra* note 7, at 327.

insurance option.⁷⁶ The result was The National Flood Insurance Act of 1968,⁷⁷ which established the National Flood Insurance Program (NFIP).⁷⁸

The NFIP sought to address flooding by offering insurance coverage, incentivizing communities to create smarter rules for development in floodplains, and creating a fund to help cover the costs of post-flood cleanup. The NFIP initially appeared to be a great success.⁷⁹ By the end of 1980, there were 2,103,851 associated insurance policies and by the end of 2018, there were 5,178,978 policies.⁸⁰

Unfortunately, that success has been hampered by recent changes in the strength and frequency of flooding.⁸¹ Though the NFIP was meant to be a self-sufficient financial entity, the program didn't set aside enough money for the next big storm.⁸² In 2005, Hurricanes Katrina, Rita, Wilma, and others pounded the Gulf and East Coast, driving the program's debt to twenty-four billion dollars.⁸³ What was once considered a policymaking success story quickly turned into a liability to the country's fiscal health.⁸⁴

A. THE BIGGERT-WATERS ACT

To combat the financial vulnerability of the NFIP, Congress passed the Biggert-Waters Act⁸⁵ in 2012 by an overwhelming majority.⁸⁶ One requirement of the Act was that the NFIP administrator develop a plan to repay the debt incurred from the devastating hurricane season of 2005.⁸⁷ This was partially achieved by phasing out subsidized policies that reduced the program's potential revenue.⁸⁸ Subsidies on 438,000 existing policies would be immediately eliminated, while the 715,000 remaining subsidized policies would be chipped away over time through a stepped phasing out.⁸⁹ Such subsidies mainly consisted of

76. Scott Gurian, *Explainer: Putting Biggert-Waters Flood Insurance Reform Act in Perspective*, NJ SPOTLIGHT NEWS (Nov. 12, 2013), <https://perma.cc/3V4N-GJHV>.

77. National Flood Insurance Act of 1968, Pub. L. No. 90-448, 82 Stat. 572 *et seq.* (codified as amended at 42 U.S.C. §§ 4001-4131).

78. *Id.*

79. *Spotlight on: Flood Insurance*, INS. INFO. INST. (June 27, 2024), <https://perma.cc/NDZ3-R7SH>.

80. *Spotlight on Flood Insurance*, LANDSCAPE CONTRACTORS INS. SERVS., INC. (Mar. 5, 2021), <https://perma.cc/9CYZ-2HPU>.

81. Greg Hanscom, *Flood Pressure: Climate Disasters Drown FEMA's Insurance Plans*, GRIST (Jan. 13, 2014), <https://perma.cc/X4JU-Y79D>.

82. *See id.*

83. *See* Gurian, *supra* note 76.

84. *See* Hanscom, *supra* note 81.

85. Biggert-Waters Flood Insurance Reform Act of 2012, Pub. L. 112-141, 126 Stat. 412, 916.

86. Logan Strother, *Congress' U-turn on Flood Insurance Reform Shows That Lawmaking Power Can Very Quickly Go from Free Rein to Constrained*, THE LONDON SCH. OF ECON. & POL. SCI.: BLOG (Jan. 4, 2017), <https://perma.cc/G64V-M3LH>.

87. Brian Collins & Shai Akabas, *The National Flood Insurance Program Still Requires Reform*, BIPARTISAN POL'Y CTR. (Jan. 23, 2014), <https://perma.cc/7Q3A-F78D>.

88. *Id.*

89. U.S. GOV'T ACCOUNTABILITY OFF., GAO-13-607, FLOOD INSURANCE: MORE INFORMATION NEEDED ON SUBSIDIZED PROPERTIES (2013), <https://perma.cc/2K68-96GP>.

grandfathered rates from owners or periods of time under which risk was calculated differently.⁹⁰ Subsidies for policies on non-primary residences, properties with severe, repetitive loss, and business properties were among the first to be affected by increases in premiums, with a cap of a twenty-five percent increase in rates each year until the premiums reflected a full non-subsidized risk rate.⁹¹ For the first time since its inception, the NFIP looked like it would charge rates that truly reflected the risk it took on, albeit at a great cost to policyholders.⁹²

B. THE HOMEOWNER FLOOD INSURANCE AFFORDABILITY ACT OF 2014

Unfortunately, the success of the Biggert-Waters Act was short-lived.⁹³ As the media reported that many homeowners would face sharp increases in rates, public support for the act plummeted.⁹⁴ Homeowners and congressional representatives alike were stunned to learn that the statutory changes, once placed into effect, would cause tenfold increases in premiums for some policyholders.⁹⁵ In a frenzied backpedal, Congress passed the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA).⁹⁶ The HFIAA, despite achieving vastly different policy goals, passed with similar bipartisan support and a similar overwhelming majority as that of the Biggert-Waters Act.⁹⁷

The HFIAA repealed significant parts of the Biggert-Waters Act.⁹⁸ One of the new law's provisions restored grandfathered rates, essentially reinstating the subsidies responsible for much of the NFIP's debt.⁹⁹ The HFIAA also set the limit of rate increases for all policies at eighteen percent per year, with few exceptions for mistakenly established initial rates and voluntary changes by the policyholder.¹⁰⁰ To help address the shortage of revenue, the Act implemented an annual flat rate surcharge for all policyholders.¹⁰¹

Though the HFIAA was sold as an effective compromise between the knee-jerk overreaction of the Biggert-Waters Act and the original flood insurance legislation, the HFIAA did not fix the problems with the NFIP. For one thing, the HFIAA does not deal with the problem of repetitive loss properties (RLPs), which are properties with “at least two claims of more than one thousand dollars in any

90. *Biggert-Waters Flood Insurance Reform Act of 2012 (BW12) Timeline*, FEMA, <https://perma.cc/BNQ2-TE5B> (last updated Apr. 17, 2013).

91. *Id.*

92. See Hanscom, *supra* note 81.

93. Thomas Ferraro, *U.S. Senate Passes Bill to Delay Hikes in Flood Insurance Rates*, REUTERS (Jan. 30, 2014), <https://perma.cc/WUZ8-KHRN>.

94. *Id.*

95. *Id.*

96. Homeowner Flood Insurance Affordability Act of 2014, Pub. L. No. 113-89, 128 Stat. 1020 *et seq.*

97. See Strother, *supra* note 86.

98. Homeowner Flood Insurance Affordability Act of 2014, Pub. L. No. 113-89, § 3.

99. *Id.* § 4.

100. *Id.* § 5.

101. *Id.* § 7.

ten-year period since 1978.”¹⁰² RLPs, despite only comprising “around one percent of NFIP policies,” have accounted for more than thirty percent of NFIP claim payments.¹⁰³ Cumulatively, the NFIP has paid over \$22.2 billion in flood claims for RLPs.¹⁰⁴

The HFIAA also ignores the problems caused by grandfathered rates.¹⁰⁵ Grandfathering allows properties initially built in compliance with the flood insurance rate map in effect at the time of construction to be locked into that rate for the future, *regardless* of current flood map compliance.¹⁰⁶ In 2018, unofficial estimates placed the ballpark figure of grandfathered policies at ten to twenty percent of all NFIP policies.¹⁰⁷ This system hides the actual risk of the property’s location from the policyholder¹⁰⁸ while also hindering the NFIP’s ability to charge the rates that it needs to run a fiscally sustainable program.¹⁰⁹ Much of the pressure that the NFIP is supposed to place on policyholders to avoid risky flood-prone properties is lost by grandfathering risky policies.¹¹⁰

C. RISK RATING

Though the HFIAA was a step back from Biggert-Waters, the emphasis on recalculating premiums remained.¹¹¹ Risk rating is the process that the NFIP uses to determine how much to charge an individual policyholder for coverage.¹¹² The level of risk that an insurer takes when insuring a policyholder is based on how likely the property will suffer flood-related damage and how much that damage will cost to fix.¹¹³ Since the 1970s, policy rates have been based on a property’s location within a flood insurance rate map.¹¹⁴ Flood maps are created using historical flood data to predict future flooding and determine whether a property is within a 100-year floodplain (1% annual chance of flooding) or a 500-year floodplain (0.2% annual chance of flooding).¹¹⁵

102. *Repeatedly Flooded Properties Cost Billions*, THE PEW CHARITABLE TRS. (Oct. 6, 2016), <https://perma.cc/R7H8-EAKR>.

103. Laura Lightbody & Brian Watts, *Repeatedly Flooded Properties Will Continue to Cost Taxpayers Billions of Dollars*, THE PEW CHARITABLE TRS. (Oct. 1, 2020), <https://perma.cc/J98Q-ACB5>.

104. *Id.*

105. Homeowner Flood Insurance Affordability Act § 4.

106. DIANE P. HORN, CONG. RSCH. SERV., R45099, NATIONAL FLOOD INSURANCE PROGRAM: SELECTED ISSUES AND LEGISLATION IN THE 115TH CONGRESS 8 (2018), <https://perma.cc/UFN5-67MF>.

107. *Id.* at 9.

108. *Id.*

109. *Id.*

110. *Id.*

111. *Id.* at 14.

112. *NFIP’s Pricing Approach*, FEMA, <https://perma.cc/3JT5-MZ2K> (last updated Nov. 26, 2024).

113. *Id.*

114. *Id.*

115. Matthew Eby, *Understanding FEMA Flood Maps and Limitations*, FIRST ST. FOUND. (Mar. 21, 2019), <https://perma.cc/9GRU-D6XU>.

The problem is that flood patterns within communities are constantly in flux, and flood maps have not been updated often enough to properly reflect the true associated risks.¹¹⁶ Increasing volatility in flooding due to climate change and other human-driven factors makes past flood data a poor indicator of future flooding.¹¹⁷ In 1994, Congress passed the National Flood Insurance Reform Act,¹¹⁸ which required “the Federal Emergency Management Agency (FEMA) [to] assess the need to revise and update all flood maps every five years.”¹¹⁹ Despite the legislative fix, flood maps generally remained inaccurate and were infrequently updated.¹²⁰ Though the NFIP claimed it would update 80% of its maps by 2014, it had only updated 42.4% by 2017.¹²¹ FEMA claimed that this was due to budgetary constraints, but an investigation by the Office of the Inspector General determined that inefficiencies in the remapping programs and improper allocation of funds were to blame.¹²² The inaccuracy of these maps not only turned the NFIP into a financial liability for the federal government but also incentivized development in areas where flooding is more likely than the maps display.¹²³ Large communities were built in high flood-risk locations under the impression that flooding was not a great risk and that the NFIP would save the day in the event of a flood.¹²⁴

The NFIP offloads some of its risk to the private sector by purchasing reinsurance. Reinsurance is insurance for insurers and functions to insulate insurers from rare probability events. For the NFIP, this comes at a significant cost with no realized benefit. From 2017 to 2023, the NFIP paid over \$1.2 billion in premiums to private insurers for reinsurance coverage.¹²⁵ In that time, FEMA did not recover a single dollar from those private insurers because no flooding events met the cost threshold to make a claim.¹²⁶ Although the intention to insulate the program from the destruction of worst-case scenario storms comes from a good place, the thresholds are simply too high to justify the cost when that money could be better used elsewhere.

D. RISK RATING 2.0

The Biggert-Waters Act required the NFIP to charge insurance premiums that accurately reflect the risk of the insured property.¹²⁷ The HFIAA later required

116. *Id.*

117. *See supra* section II.B.

118. National Flood Insurance Reform Act of 1994, Pub. L. No. 103-325, 108 Stat. 2160 *et seq.*

119. *See Eby, supra* note 115.

120. *Id.*

121. OFF. OF INSPECTOR GEN., *OIG-17-110, FEMA NEEDS TO IMPROVE MANAGEMENT OF ITS FLOOD MAPPING PROGRAMS* (2017), <https://perma.cc/4F2L-23FY>.

122. *Id.*

123. *See Eby, supra* note 115.

124. *Id.*

125. *National Flood Insurance Program's Reinsurance Program*, FEMA, <https://perma.cc/72HK-XPCS> (last updated Sept. 19, 2024).

126. DIANE P. HORN & BAIRD WEBEL, CONG. RSCH. SERV., *IN10965, NATIONAL FLOOD INSURANCE PROGRAM (NFIP), REINSURANCE, AND CATASTROPHE BONDS 1–2* (May 28, 2024).

127. Biggert-Waters Flood Insurance Reform Act, Pub. L. No. 112-141, § 100207, 126 Stat. 919 (2012).

FEMA to “carry out studies necessary to estimate risk premium rates based on . . . the flood mitigation activities undertaken on a property, including . . . land use measures, floodproofing, flood forecasting, and similar measures.”¹²⁸ This opened the door for the implementation of what the National Flood Insurance Agency calls “Risk Rating 2.0.”¹²⁹

Risk Rating 2.0 eliminated flood maps and abandoned the 100-year and 500-year floodplain model.¹³⁰ Instead, risk is “calculated based on the specific features of an individual property, including structural variables such as the foundation type of the structure, the height of the lowest floor of the structure relative to base flood elevation, and the replacement cost value of the structure.”¹³¹ Additionally, the new rating system “incorporate[s] . . . geographical variables such as the distance to water, the type and size of nearest bodies of water, flood frequency and the elevation of the property relative to the flooding source.”¹³² Even with the statutory limit of an eighteen percent increase in premium per year for all policyholders,¹³³ this new system has the potential to increase flood insurance costs significantly for some policyholders.¹³⁴

Risk Rating 2.0 was rolled out in three phases.¹³⁵ Phase I was implemented on October 1, 2021, and made new flood insurance policies written after that date subject to the new pricing regime.¹³⁶ Phase II was implemented on April 1, 2022, and made all remaining policies renewing on or after that date subject to the new pricing regiment.¹³⁷ As of April 1, 2023, Phase III had been implemented, leaving the new pricing regiment fully operational.¹³⁸

Risk Rating 2.0 will change flood insurance rates, but exactly how much is yet to be seen.¹³⁹ FEMA has been adamant that the rate increases will not place an undue burden on policyholders.¹⁴⁰ It claims that under Risk Rating 2.0, “96% of current policyholders will see either an immediate decrease or \$20 or less per month increase in their premiums.”¹⁴¹ However, this claim only applies to the initial implementation of the new pricing system.¹⁴² Increasing flood risk makes it

128. Homeowner Flood Insurance Affordability Act, Pub. L. No. 113-89, § 14, 128 Stat. 1020 (2014).

129. See FEMA, *supra* note 112.

130. DIANE P. HORN, CONG. RSCH. SERV., R45999, NATIONAL FLOOD INSURANCE PROGRAM: THE CURRENT RATING STRUCTURE AND RISK RATING 2.0 (2022), <https://perma.cc/4XBM-SGPH>.

131. *Id.*

132. *Id.*

133. Homeowner Flood Insurance Affordability Act of 2014, Pub. L. No. 113-89, § 5.

134. See *infra* text accompanying notes 162–67.

135. FEMA, *supra* note 112.

136. *Id.*

137. *Id.*

138. *Id.*

139. *Id.*

140. See *Risk Rating 2.0 Is Equity in Action*, FEMA, <https://perma.cc/5U73-DCEM>.

141. *Id.*

142. *Id.*

likely that the NFIP will be pushing up against the 18% statutory increase limit. If the average current-day flood insurance rate of \$995 were increased by 18% every year, in five years the rate would be \$2,276.32, a 229% increase.¹⁴³ If the annual rate increase runs up against the limit in a high-premium state such as Vermont, we could see rates balloon from \$1,610 to a staggering \$3,683.29 per year.¹⁴⁴

E. OPTIONS FOR PREMIUM REDUCTION FOR POLICYHOLDERS

Policyholders can reduce their premiums under Risk Rating 2.0 by flood-proofing their homes.¹⁴⁵ Flood-proofing entails modifying a property to better prevent damage caused by flooding.¹⁴⁶ One way this can be done is by elevating utilities such as electrical panels, water heaters, air conditioners, and furnaces above the level where flood waters could reach.¹⁴⁷ Another way is to install flood openings on foundations to help prevent potential damage to walls from flood water pressures.¹⁴⁸ Filling the basement of the property could also reduce flood insurance premiums by up to twenty percent.¹⁴⁹ Finally, elevating one's property so that the first floor is above the elevation for flood risk and obtaining an Elevation Certificate¹⁵⁰ is another way that policyholders can reduce their premiums.¹⁵¹ However, those modifications come at a steep cost.¹⁵² What is more cost-effective is to artificially build up the land on which the foundation sits before the house is built.¹⁵³ This "cheap" solution can cost \$13,000–\$14,000 to raise a house's foundation by one foot.¹⁵⁴

Community flood mitigation is another way to reduce the financial impacts of flood insurance.¹⁵⁵ This consists of improvements in infrastructure, development, and zoning that aim to mitigate potential flood damage for the entire community.¹⁵⁶ If a community mitigation plan meets the minimum requirements set by the NFIP, policyholders in that community can qualify for discounted flood insurance

143. $995(1.18)^5 = 2276.32$. $2276.32/995 = 2.29$.

144. $1610(1.18)^5 = 3683.29$.

145. Jason Metz, *How Much Does Flood Insurance Cost?*, FORBES (Oct. 1, 2021), <https://perma.cc/9HG6-U78C>.

146. *Id.*

147. *Id.*

148. *Id.*

149. *How Can I Pay Less for Flood Insurance?*, FEMA, <https://perma.cc/XX4H-FUW8> (last visited Mar. 28, 2025).

150. *See Elevation Certificate*, FEMA, <https://perma.cc/S3HP-G8JE> (last updated Sept. 27, 2023).

151. Metz, *supra* note 145.

152. Amanda Kolson Hurley, *The House of the Future Is Elevated*, BLOOMBERG (Dec. 8, 2017, 11:33 AM), <https://perma.cc/3WLS-29XS>.

153. *Id.*

154. *Id.*

155. FEMA, FLOOD MITIGATION ASSISTANCE COMMUNITY FLOOD MITIGATION 1 (2021), <https://perma.cc/MBK4-3URM>.

156. *Id.*

premiums.¹⁵⁷ FEMA sets aside limited federal funding through the Flood Mitigation Assistance (FMA) program¹⁵⁸ to grant to communities for flood mitigation efforts.¹⁵⁹ These projects include building flood control structures to keep flood waters out, systems to divert, store, and manage floodwater if it gets in, or restoration efforts for streams, floodplains, and wetlands to help reduce the severity of flood events.¹⁶⁰

Although the FMA program is a step in the right direction, grants to communities are limited to thirty million dollars per project, and the program only set aside seventy million dollars in total for this program in 2021.¹⁶¹ Though this amount of money could help cover a small project,¹⁶² it would not do much to help the larger communities most affected by the NFIP.¹⁶³ A 2019 report found that for every dollar spent on “Federal Mitigation Grants,” the government looks to save six dollars in future disaster costs.¹⁶⁴ If effectiveness per dollar is the goal, much more should be allocated to this program.¹⁶⁵ Additionally, a reduction in risk due to mitigation would also likely reduce insurance premiums of homeowners in those communities.

Those without a mortgage can choose to forego flood insurance altogether,¹⁶⁶ but not being covered poses substantial risks.¹⁶⁷ Many mistakenly believe that homeowner’s insurance will cover flooding, but flood damage is not covered under most plans.¹⁶⁸ Others believe that limited FEMA disaster assistance will be enough, but FEMA’s help is woefully inadequate. Though FEMA provides emergency assistance for uninsured homeowners, such as “paying for temporary housing in a hotel, motel or mobile home, or making basic repairs to make a house habitable,” that aid is typically “limited to less than \$40,000 — a fraction of what it costs to rebuild.”¹⁶⁹

157. *Community Rating System*, FEMA, <https://perma.cc/33V3-FEGZ> (last updated Mar. 27, 2025).

158. See FEMA, *supra* note 155 (Seventy million dollars was set aside in 2021).

159. *Id.*

160. *Id.*

161. *Id.*

162. Press Release, FEMA, Illinois Announced Under FEMA Pre-Selection for \$1.1M in Mitigation Grant Funding to Build Community Resilience (Aug. 8, 2022), <https://perma.cc/Y7FG-8L6U> (“On August 1, FEMA announced the city of Downers Grove, Ill., was included in the pre-selection of subapplicants to receive a portion of \$160M in funding through the Flood Mitigation Assistance (FMA) program to assist communities across the nation enhance climate and disaster resiliency. The city’s proposed \$1.5M project would acquire and remove a 14-unit apartment building and its parking lots within the 100-year floodplain of St. Joseph Creek.”).

163. See discussion *infra* section IV.B.

164. NAT’L INST. OF BLDG. SCIS., NATURAL HAZARD MITIGATION SAVES: 2019 REPORT 1 (2019), <https://perma.cc/A6AC-PYNJ>.

165. See *id.*

166. CLIMATE CENTRAL, COMING STORMS: CLIMATE CHANGE AND THE RISING THREAT TO AMERICA’S COASTAL SENIORS PT. III 3 (2021), <https://perma.cc/S5YN-5GY4>.

167. Flavelle, *supra* note 6.

168. *Id.*

169. *Id.*

F. DISPROPORTIONATE EFFECT OF NFIP POLICIES

The misguided policies of the NFIP affect some groups more than others. By way of example, a study of the NFIP's impact on the elderly highlights this disparity.

Since 1970, the proportion of Americans over fifty-five living in coastal areas has increased by over eighty percent.¹⁷⁰ A study of the New Jersey coast found that a large portion of the people over sixty-five living within the state lived within a coastal flood exposure area.¹⁷¹ A 2017 survey of census data found that within the national "hundred-year floodplain . . . twenty-nine percent of households included seniors," and "[o]f the households in the combined floodplain . . . twenty-eight percent include[d] seniors."¹⁷²

Many American retirees have a large portion of their net worth in home equity.¹⁷³ In 2020, Americans aged 65-69 had an average of \$136,670 in home equity totaling 61% of their net worth.¹⁷⁴ That proportion increases with the respective age of retirees.¹⁷⁵ In the same year, Americans aged 75 and older had an average of \$149,860 in home equity totaling 75% of their net worth.¹⁷⁶ A flooding event that destroys a home can take out a large portion of the resources that a retired individual or family relies on for retirement security.¹⁷⁷ When considering that, in 2020, 74% of retirees owned their homes without a mortgage,¹⁷⁸ and those that own their homes debt-free are not required by law to carry flood insurance,¹⁷⁹ an increase in flood insurance prices because of the Risk Rating 2.0 framework has the potential to encourage retirees without mortgages to drop their flood insurance coverage or to avoid purchasing flood insurance in the first place.¹⁸⁰ A FEMA report obtained by The Associated Press revealed that the agency expects "one million fewer Americans will buy flood insurance by the end of the decade" due to the increasing costs of these policies.¹⁸¹

170. Craig Miller, *Coastal Flooding Is Putting Retirement Savings at Risk*, FORBES (Apr. 8, 2021, 4:14 PM), <https://perma.cc/ATQ5-TQ4S>.

171. Rutgers University, *New Jersey's Senior Citizens*, YOUTUBE (Sept. 21, 2016), <https://perma.cc/UR6L-Y8FQ>.

172. CAROLINE PERI ET AL., POPULATION IN THE U.S. FLOODPLAINS 3 (2017), <https://perma.cc/A9FG-8Q2L>.

173. Kathleen Coxwell, *How Do You Compare? Average Cash, Savings, Home Equity, and Other Balances*, NEWRETIREMENT (Oct. 1, 2020), <https://perma.cc/64J5-9QAF>.

174. *Id.*

175. *Id.*

176. *Id.*

177. Amanda Umpierrez, *Natural Disasters Damage Retirement Accounts, Too*, PLANSPONSOR (Sept. 27, 2019), <https://perma.cc/C3KM-NPAC>.

178. *Id.*

179. CLIMATE CENTRAL, *supra* note 166.

180. *Id.*

181. Michael Phillis, *FEMA Report: Flood Insurance Hikes Will Drive 1M From Market*, ASSOCIATED PRESS (July 22, 2022, 9:04 AM), <https://perma.cc/PDE9-H2AX>.

Additionally, retirees on the coast with most of their net worth in home equity face financial risk from climate change and flood risk depreciation.¹⁸² One study found that “[h]omes exposed to sea level rise . . . sell for approximately seven percent less than observably equivalent unexposed properties equidistant from the beach,” and that this percentage has grown over time.¹⁸³ As the effects of climate change become more pronounced and Americans increasingly prioritize flood and climate risk in home-purchasing decisions, this effect may become more substantial.¹⁸⁴ The percentage of Americans who believe that the global climate is warming, that the warming is caused by humans, and that this fact is at least somewhat worrying are at an all-time high and continue to climb.¹⁸⁵ Although this awareness hasn’t yet directly affected the national real estate market, it has resulted in significant political pressure on policymakers to address climate change issues, which will likely affect lifestyle choices in the long term.¹⁸⁶

The financial situation of the average retired person in the United States is already precarious.¹⁸⁷ The average annual pretax income of those 65 years and older in 2021 was \$55,335.¹⁸⁸ The average annual expenditure for the same group was \$52,141.¹⁸⁹ This leaves retirees with only a small cushion of \$3,194 for unexpected expenses, and increasing flood insurance costs could quickly close that gap. The current average cost of flood insurance from the NFIP across all states is \$995 per year.¹⁹⁰ This ranges among states from as low an average as \$642 per year in Florida to as high as \$1,610 per year in Vermont.¹⁹¹

The community flood mitigation program has a mechanism in place for protecting vulnerable groups. Communities are funded based in part on how many points the mitigation plan accumulates under specific FMA scoring criteria.¹⁹² One way to score points is to have a plan “that benefit[s] area(s) with an overall Social Vulnerability Index (SVI) score of 0.7501 or greater per the Centers for

182. *Id.*

183. Asaf Bernstein et al., *Disaster on the Horizon: The Price Effect of Sea Level Rise*, 134 J. FIN. ECON. 253, 253–54 (2019).

184. Brady Dennis, *Where U.S. House Prices May Be Most Overvalued as Climate Change Worsens*, WASH. POST (Feb. 16, 2023, 7:11 PM), <https://perma.cc/49Y9-N339>.

185. ANTHONY LEISEROWITZ ET AL., YALE PROGRAM ON CLIMATE CHANGE COMM’N & GEORGE MASON UNIV. CTR. FOR CLIMATE CHANGE COMM’N, CLIMATE CHANGE IN THE AMERICAN MIND 3 (2018), <https://perma.cc/R6MQ-6M4S>.

186. Sandra Venghaus et al., *The Impact of Climate Change Awareness on Behavioral Changes in Germany: Changing Minds or Changing Behavior?*, in 12 ENERGY, SUSTAINABILITY, & SOC’Y 8 (2022).

187. *See Consumer Expenditure Surveys, Table 1300, Age of Reference Person: Annual Expenditure Means, Shares, Standard Errors, and Coefficients of Variation*, U.S. BUREAU OF LAB. STAT. (Sept. 2022), <https://perma.cc/8USM-AV6X>.

188. *Id.*

189. *Id.*

190. Jason Metz, *How Much Does Flood Insurance Cost?*, FORBES (Oct. 20, 2022), <https://perma.cc/4JSN-VWYJ>.

191. *Id.*

192. FEMA, *supra* note 155.

Disease Control.”¹⁹³ The SVI is a system that measures a “community’s ability to prevent human suffering and financial loss in the event of disaster” based upon “[t]he degree to which a community exhibits certain social conditions.”¹⁹⁴ These social conditions fall into four categories: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation.¹⁹⁵ The CDC’s SVI factors in elderly status.¹⁹⁶ “Aged sixty-five and older” is one of the sixteen variables considered in one of the nine point-earning categories of the FMA.¹⁹⁷

Disproportionate effects are not limited to the elderly, however. Though “present-day flood risk is concentrated in both the most White and the most impoverished communities across the nation,” future flood risk is expected to fall primarily upon minority groups.¹⁹⁸ Hispanic and Latino Americans are forty-seven percent more likely than non-Hispanic and non-Latino Americans to live in areas at high risk of future coastal flooding.¹⁹⁹ Minorities are sixteen percent more likely than non-minorities to live in areas expected to have the worst inland flooding damages.²⁰⁰ And flood risk up to the year 2050 shows at least a twenty percent increase in flood risk for the top twenty percent proportionally-Black census tracts compared to almost no increase in flood risk for the lowest twenty percent proportionally-Black census tracts.²⁰¹ A better functioning NFIP can help reduce the disproportionate impacts of flooding on minority groups.

III. PROPOSED CHANGES

Transforming the NFIP into a program that protects wealth and property while also mitigating flood risk will require a multi-faceted approach. Many of the current programs provide workable solutions, but priorities and resources must shift to successfully adjust to the needs of changing population demographics and a changing environment.²⁰² At a general level, the NFIP needs to reprioritize ex ante preparations over ex post responses.²⁰³

For most of the NFIP’s history, the focus has been on responding to natural disasters when they occur.²⁰⁴ This strategy has proven ineffective and will continue to

193. *Id.*

194. CTRS. FOR DISEASE CONTROL & AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, SVI 2020 DOCUMENTATION (2022), <https://perma.cc/D59F-CDUU>.

195. *Id.*

196. *See id.*

197. *Id.*; *see also* FEMA, *supra* note 155.

198. Oliver E. J. Wing et al., *Inequitable Patterns of US Flood Risk in the Anthropocene*, 12 NAT. CLIMATE CHANGE 156, 158 (2022).

199. EPA, 430-R-21-003, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES 58 (2021).

200. *Id.* at 75.

201. Wing et al., *supra* note 198, at 159.

202. *See* discussion *supra* Part II.

203. *See* NAT’L INST. OF BLDG. SCIS., *supra* note 164.

204. *See supra* text accompanying notes 81–86.

overwhelm the system with a steady increase in disasters and resulting claims.²⁰⁵ Preventative actions are six times more cost-effective than response actions.²⁰⁶ The volatility of future flood events due to climate change does not afford a well-functioning NFIP the luxury to wait and respond.²⁰⁷ Future flood events could stretch the resources of the NFIP to the breaking point, along with those of the federal government.²⁰⁸

A. SUGGESTED IMPROVEMENTS TO RISK RATING 2.0

The two notable programs within the NFIP that currently take this preventative approach are the rate reduction incentives under Risk Rating 2.0 and the FMA program.²⁰⁹ Risk Rating 2.0 is the best way to incentivize individuals and should be the primary way the NFIP enacts a prevention regime, but the program's scope and scale must be expanded to protect Americans' property.²¹⁰

Expansion should focus on the collection and publication of information. Flood insurance rates do not tell the full story of risk, and should not be the only way homeowners and future buyers are informed of risks to their property.²¹¹ There should be a federal requirement for flood risk disclosure in all real estate transactions.²¹² The disclosure should include five, ten, twenty, and fifty-year projections for flood risk, information on the current remediation of the property, and projections for how that property would fare in a flooding event. The potential loss of value of the property should be given in a dollar amount range, along with a cost range for remediation options that would prevent that harm. These disclosure requirements would allow consumers to know their true risk before deciding to undertake that risk. Those looking to purchase a property could then adequately plan for the cost of ownership.²¹³ Required flood risk disclosure may also drive higher rates of flood insurance uptake by homeowners who are not under a legal requirement to purchase flood insurance but see the purchase as a financially prudent decision.

These robust disclosure requirements would also incentivize the installation of flood protection by homeowners looking to sell their current homes and speculative builders looking to build a house to put on the market. Market participants

205. *See id.*

206. *See* NAT'L INST. OF BLDG. SCIS., *supra* note 164, at 9.

207. *See* Jeff Turrentine & Brian Palmer, *It's Time to Fix Our Water-Logged National Flood Insurance Program*, NAT. RES. DEF. COUNCIL (July 22, 2022), <https://perma.cc/GW8D-YKXF>.

208. *Id.*

209. *See supra* text accompanying notes 131–138.

210. *See id.*

211. *See supra* text accompanying notes 123–132.

212. Thirty-five states currently have mandated flood risk disclosures that vary in breadth and strength, but there is no federally mandated flood risk disclosure requirement for real estate transactions. *See* FEMA, FLOOD RISK DISCLOSURE: MODEL STATE REQUIREMENTS FOR DISCLOSING FLOOD RISK DURING REAL ESTATE TRANSACTIONS 1 (2022), <https://perma.cc/WZM3-X5VV>.

213. *Id.*

would have better information, which would promote healthier investing and minimize the risk that the NFIP will have to bear the burden of bad decisions. The information would cause adjustments in market prices which would serve to make the prices of these properties truly reflect the associated risks. Accurately priced-in flood risk would also prevent willful blindness by market participants.

Proper risk disclosures respect the autonomy of individual market participants to make decisions based on their values. For example, many of us keep items in our homes that we consider invaluable and irreplaceable. Imperfect or misleading information about the true risk of property destruction does not allow residents to make important decisions about the risk to those precious belongings. If risk were accurately disclosed, individual market participants would be able to make these important decisions for themselves.

Though increased mandatory disclosures may be politically unpopular due to the potential chilling of the real estate market, the accurate reflection and communication of flood risks will pay off in the long term and create a real estate market more resilient to disasters. The chilling effect of disclosures pales in comparison to the potential market harm of a large storm that displaces thousands of homeowners. These proposals would spare us from some of that destructive potential.

B. SUGGESTED IMPROVEMENTS TO THE FMA PROGRAM

The other prevention strategy ripe for improvement is the FMA program. This program holds great promise in filling in the gaps that the rate reduction incentive will not fix. The FMA program has the benefit of economies of scale and the ability to prevent flooding where individual flood prevention measures are ineffective.

Primarily, the scale of the FMA program must be dramatically expanded if it is to succeed. Though the program's funding increased from \$70 million in 2021 to \$160 million in 2022, this is still a pittance compared to the amount required for public works projects addressing flooding. A proposed seawall project to protect downtown Miami from future flooding is estimated to cost \$6 billion.²¹⁴ The estimated cost for Miami-Dade County alone, not including the cost to homeowners, to phase out 120,000 septic tanks that fall under flood risk is \$4 billion.²¹⁵ Another proposed sea wall project to protect New York City from future flood threats is estimated to cost \$119 billion.²¹⁶ Jumping from the hundreds of millions to the hundreds of billions is a massive leap, but our already large current spending would be better focused on the prevention of future catastrophes. Considering the NFIP reached a \$24 billion level of indebtedness from clean-up efforts during the 2005 hurricane season, prevention would have been a much better use of that

214. Patricia Mazzei, *A 20-Foot Sea Wall? Miami Faces the Hard Choices of Climate Change*, N.Y. TIMES (June 2, 2021) <https://perma.cc/T7PN-44P2>.

215. *Id.*

216. Anne Barnard, *The \$199 Billion Sea Wall That Could Defend New York ... or Not* (Jan. 17, 2020) <https://perma.cc/7Q4H-MU7F>.

money. If we use the accepted figure that every dollar invested in prevention is worth six dollars in future value, then \$6 billion is within the realm of political feasibility for funding the FMA project.

Community-based efforts are effective because they engage multiple stakeholders with diverse interests. They address threatened infrastructure in the commons such as roads and utilities. They also protect holdouts that refuse to prepare for future flooding under the Risk Rating 2.0 incentives. Community projects cultivate a sense of authority and responsibility in members of the community that creates social pressure which can spread to holdouts, and drive engagement that sustains protection efforts through disasters and changes. A large-scale program succeeds when it convinces others to move beyond their own self-interest, and community engagement can achieve that goal.²¹⁷

The FMA program shares ideology with other successful legislation. The Biden administration successfully passed The Inflation Reduction Act,²¹⁸ branded as a “Green New Deal.” In the 1930s, the original New Deal successfully stopped the “Dust Bowl,” a seemingly insurmountable environmental catastrophe not unlike the devastating floods that the country now faces.²¹⁹ Federal agencies worked with local groups and “planted roughly 220 million trees, creating 18,000 miles of windbreaks on some 30,000 farms,” eliminating the dust bowl for future generations.²²⁰ The New Deal proved that large-scale government-sponsored projects could address environmental catastrophe and pay dividends to future generations and is a proof of concept for an expanded FMA program.

Another example of the success of large-scale community programs can be found in New Orleans. On August 29, 2005, Hurricane Katrina flooded 80% of the city, causing nearly 1000 deaths and \$21 billion in direct damage to property and another \$6.7 billion to public infrastructure.²²¹ The failure of the New Orleans flood protection system is widely considered one of the worst engineering disasters in American history.²²² After Katrina, the federal government spent \$14.5 billion on enhanced flood protections such as surge barriers, levees, and other flood controls.²²³ On August 29, 2021, the sixteenth anniversary of Hurricane Katrina, Hurricane Ida made landfall in New Orleans.²²⁴ The city fared much better with the infrastructure

217. See generally JOHN BRIGHAM & DON W. BROWN, POLICY IMPLEMENTATION - PENALTIES OR INCENTIVES? (1980).

218. Inflation Reduction Act of 2022, Pub. L. 117-169, 136 Stat. 1818 *et seq.*

219. David Woolner, *Biden Wants to Go Big on Infrastructure. History Says That's the Right Call*, WASH. POST (Apr. 7, 2021), <https://perma.cc/SP6Z-YNVD>.

220. *Id.*

221. Allison Plyer, *Facts for Features: Katrina Impact*, THE DATA CTR. (Aug. 26, 2016), <https://perma.cc/ZX9U-DZ87>; AM. SOC'Y OF CIV. ENG'RS, THE NEW ORLEANS HURRICANE PROTECTION SYSTEM: WHAT WENT WRONG AND WHY V (2007), <https://perma.cc/MLK2-FX2W>.

222. AM. SOC'Y OF CIV. ENG'RS, *supra* note 221.

223. *New Orleans Levees Passed Hurricane Ida's Test, but Some Suburbs Flooded*, NPR (Aug. 31, 2021, 10:45 AM), <https://perma.cc/V5SC-E7WE>.

224. *Id.*

improvements, but the neighboring suburb of LaPlace, which did not receive post-Katrina improvements, was not so lucky. It is now pursuing its own flood prevention infrastructure improvements.²²⁵

C. ADDITIONAL PROPOSALS

Essential to bolstering both programs will be the elimination of grandfathered rates. Rates that accurately reflect the true risk and potential liability of the NFIP will be higher than they are currently, but higher costs will likely motivate policyholders to reduce those costs using the incentive programs. Potential changes to grandfathered rates should be checked against the social vulnerability index to ensure that their elimination does not disproportionately affect vulnerable groups. Accurate rates can be phased in or enacted after a waiting period to prevent shock to affected policyholders and give them a chance to take the steps necessary to eliminate their flood risk or seek alternatives.

Currently, flood insurance rates only incentivize policyholders directly. Incentives must be expanded to also target third-party market players. For example, the NFIP should directly incentivize contractors and consultants with cash or tax breaks for participation in flood prevention activities. Though policyholders will themselves be motivated to hire contractors and consultants to take advantage of the incentives, motivating those contractors and consultants directly would place more pressure on the system from other angles. Starting a contracting or consulting service for flood-proofing is difficult due to the prohibitive costs of buying equipment, hiring and training staff, and other startup costs.²²⁶ Government incentives to prospective flood-proofing businesses could help break down that cost barrier. Increasing the number of service providers would encourage competition, the result of which would be increased advertising and drive to capture the future business of policyholders. This creates for policyholders a push from the NFIP and a pull from contractors and consultants toward responsible risk management for flood-prone properties.

Additionally, the NFIP should create a threshold beyond which repetitive loss properties²²⁷ (RLPs) will no longer be covered. The cost-spreading burden that RLPs currently place on all policyholders and the rest of the system is unfair. Policyholders making two or more claims within any ten-year period should have their rates increased in proportion to their future risk. The yearly maximum allowable increase in rates of eighteen percent should be multiplied by how many claims have been made within any ten-year period. This should be a non-retroactive

225. *Id.*

226. *What Are the Main Startup Costs for an Environmental Consulting Agency?*, BUS. PLANS (Sept. 30, 2024), <https://perma.cc/M973-H5TC>.

227. *See* THE PEW CHARITABLE TRS., *supra* note 102 (defining RLPs as “buildings and/or contents for which the NFIP has paid at least two claims of more than \$1,000 in any 10-year period since 1978.”).

policy and should attach to the property and be disclosed with the above proposed required flood risk disclosures.²²⁸

Environmental legislation can also reduce the risk of specific kinds of flooding. Laws that require rainwater mitigation would reduce flash flooding along streams and in areas where storm sewer stress is a concern.²²⁹ More stringent requirements for reducing or mitigating hard surfaces in new construction and development could be imposed, and incentives for replacing existing poor hydraulic engineering with updated systems that have rainwater mitigation in mind could be created.²³⁰ Legislative protections for mangrove forests, estuaries, and mud flats would reduce the impact of storm surges, and legislation that protects wetlands would reduce riverine flooding. High on this list is a legislative reversal of the narrowing of the Clean Water Act by the Supreme Court in *Sackett*.

U.S. climate change policy can also influence the future of flooding. The U.S. is one of the world's largest emitters of greenhouse gases.²³¹ If our policies reduce emissions, then a reduction in flooding can be expected to follow over the long run. A one-and-a-half-degree Celsius increase in global temperature would cause far less flooding than that of a three or four-degree temperature increase.²³² The U.S. also has the opportunity to lead by example, and potentially incentivize other countries to reduce their own emissions.

D. METHODS OF FUNDING

The NFIP is funded mostly through policyholder premiums, but the amount collected will not be enough to enact these proposed solutions.²³³ The NFIP also receives money through appropriations to cover the cost of flood mapping and risk analysis.²³⁴ Ideally, Congress would increase its appropriations to the NFIP to cover the proposed solutions.

It is most politically feasible to subsidize these changes through tax deductions or credits. Tax deductions and credits can be passed through reconciliation with a simple majority in the Senate instead of the two-thirds majority needed for most bills.²³⁵ In deciding between credits and deductions, credits have several

228. See *supra* text accompanying notes 219–21.

229. *Understand How Stormwater Management Plans Reduce Rainwater Runoff*, FIRST ST., <https://perma.cc/7GRR-B4HY> (last visited Mar. 31, 2025).

230. *Id.*

231. Johannes Friedrich et al., *This Interactive Chart Shows Changes in the World's Top 10 Emitters*, WORLD RES. INST. (Mar. 2, 2023), <https://perma.cc/2NG4-TN84>.

232. See *supra* section II.B.

233. DIANE P. HORN, CONG. RSCH. SERV., IN11049, A BRIEF INTRODUCTION TO THE NATIONAL FLOOD INSURANCE PROGRAM: HOMELAND SECURITY ISSUES IN THE 116TH CONGRESS 2 (2019).

234. DIANE P. HORN & BAIRD WEBEL, CONG. RSCH. SERV., R44593, INTRODUCTION TO THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) 23 (2023).

235. David Wessel, *What Is Reconciliation in Congress?*, BROOKINGS, <https://perma.cc/PD6D-YC8U> (last updated Jan. 13, 2025).

advantages.²³⁶ Most significantly, tax credits give more incentive to those with tax-free income streams, such as those collecting social security, child support, or life insurance proceeds.²³⁷ A deduction only reduces the amount of taxable income that a filer reports, and if there is little to no taxable income to begin with, then a deduction offers no incentive.²³⁸ Credits therefore have the potential to incentivize a greater portion of the population.

The Inflation Reduction Act²³⁹ provides a roadmap for the effective use of tax credits. The Act provides a credit against up to thirty percent of the tax imposed on a homeowner for energy-efficient home improvements.²⁴⁰ This includes a description of the types of improvements allowed, what form those improvements must take,²⁴¹ and the individual dollar limits on each type of improvement.²⁴² In its first year, the Act created 170,000 clean energy jobs and spurred \$110 billion in clean energy manufacturing investments, proving that these types of incentives work.²⁴³ This type of credit could easily be applied to the individual home floodproofing encouraged by Risk Rating 2.0, or tied to individual efforts that play into a greater community flood mitigation plan through the FMA program.

Fixing the NFIP will also allow the program to cease the purchase of reinsurance. The NFIP does not need catastrophic event protection because it already has the financial support of the federal government should a catastrophic event occur. Discontinuing reinsurance coverage will free up money that is currently creating no value. It will be even harder to justify expenditures on reinsurance should the NFIP become a risk-accurate preventative system.

CONCLUSION

The National Flood Insurance Program was established to provide financial protection and security to flood-prone Americans. However, years of compromise, mismanagement, and shortcomings have created a dysfunctional insurance system that misleads policyholders with inaccurate risk assessment and creates a fiscal liability for the federal government. The already precarious financial situation

236. *Policy Basics: Tax Exemptions, Deductions, and Credits*, CTR. ON BUDGET & POL'Y PRIORITIES, <https://perma.cc/4EGD-MMX3> (last updated Nov. 24, 2020).

237. *Id.*

238. *Id.*

239. Inflation Reduction Act of 2022, Pub. L. 117-169, 136 Stat. 1818 *et seq.*

240. 26 U.S.C. § 25C(a).

241. 26 U.S.C. § 25C(b).

242. 26 U.S.C. § 25C(c).

243. *FACT SHEET: One Year In, President Biden's Inflation Reduction Act is Driving Historic Climate Action and Investing in America to Create Good Paying Jobs and Reduce Costs*, THE WHITE HOUSE (Aug. 16, 2023), <https://perma.cc/L6DT-BC77>.

of many Americans is further stressed by an NFIP that has incentivized them to move to flood-prone areas without adequate information or protection. The Program can be fixed by adopting accurate assessment of risk and calculation of premiums and disclosing the results of such efforts. Additionally, increased funding for individual and community flood mitigation plans would eliminate some risk of flooding. Adopting these changes will ensure that the program remains able to achieve its goals.