



July 2023

FLOOD INSURANCE

FEMA's New Rate-Setting Methodology Improves Actuarial Soundness but Highlights Need for Broader Program Reform

Accessible Version

GAO Highlights

Highlights of [GAO-23-105977](#), a report to congressional addressees

Why GAO Did This Study

NFIP was created with competing policy goals—keeping flood insurance affordable and the program fiscally solvent. A historical focus on affordability has led to premiums that do not fully reflect flood risk, insufficient revenue to pay claims, and, ultimately, \$36.5 billion in borrowing from Treasury since 2005. FEMA’s new Risk Rating 2.0 methodology is intended to better align premiums with underlying flood risk at the individual property level.

This report examines several objectives, including (1) the actuarial soundness of Risk Rating 2.0, (2) how premiums are changing, (3) efforts to address affordability for policyholders, (4) options for addressing the debt, and (5) implications for the private market. GAO reviewed FEMA documentation and analyzed NFIP, Census Bureau, and private flood insurance data. GAO also interviewed FEMA officials, actuarial organizations, private flood insurers, and insurance agent associations.

What GAO Recommends

GAO recommends six matters for congressional consideration. Specifically, Congress should consider the following:

- Authorizing and requiring FEMA to replace two policyholder charges with risk-based premium charges
- Replacing discounted premiums with a means-based assistance program that is reflected in the federal budget
- Addressing NFIP’s current debt—for example, by canceling it or modifying repayment terms—and potential for future debt
- Authorizing and requiring FEMA to revise NFIP rules hindering the private market related to (1) continuous coverage and (2) partial refunds for midterm cancellations

GAO is also making five recommendations to FEMA, including that it publish an annual report on NFIP’s actuarial soundness and fiscal outlook. The Department of Homeland Security agreed with the recommendations.

View [GAO-23-105977](#). For more information, contact Alicia Puente Cackley at (202) 512-8678 or cackleya@gao.gov or Frank Todisco at (202) 512-2700 or todisco@gao.gov.

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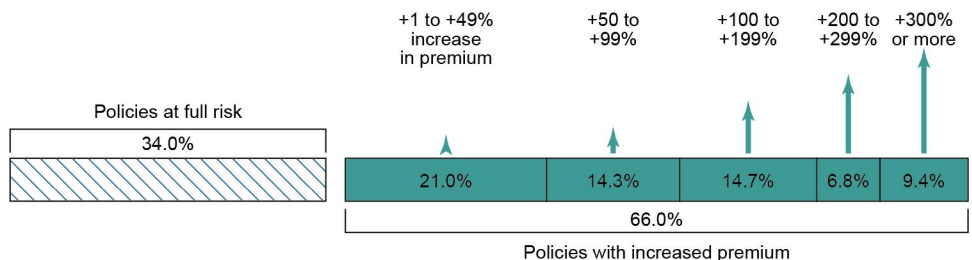
FEMA’s New Rate-Setting Methodology Improves Actuarial Soundness but Highlights Need for Broader Program Reform

What GAO Found

In October 2021, the Federal Emergency Management Agency (FEMA) began implementing Risk Rating 2.0, a new methodology for setting premiums for the National Flood Insurance Program (NFIP). The new methodology substantially improves ratemaking by aligning premiums with the flood risk of individual properties, but some other aspects of NFIP still limit actuarial soundness. For example, in addition to the premium, policyholders pay two charges that are not risk based. Unless Congress authorizes FEMA to align these charges with a property’s risk, the total amounts paid by policyholders may not be actuarially justified, and some policyholders could be over- or underpaying. Further, Congress does not have certain information on the actuarial soundness of NFIP, such as the risk that the new premiums are designed to cover and projections of fiscal outlook under a variety of scenarios. By producing an annual actuarial report that includes these items, FEMA could improve understanding of Risk Rating 2.0 and facilitate congressional oversight of NFIP.

Risk Rating 2.0 is aligning premiums with risk, but affordability concerns accompany the premium increases. FEMA had been increasing premiums for a number of years prior to implementing Risk Rating 2.0. By December 2022, the median annual premium was \$689, but this will need to increase to \$1,288 to reach full risk. Under Risk Rating 2.0, about one-third of policyholders are already paying full-risk premiums. Many of these policyholders had their premiums reduced upon implementation of Risk Rating 2.0. All others will require higher premiums, including 9 percent who will eventually require increases of more than 300 percent. Further, Gulf Coast states are among those experiencing the largest premium increases. Policies in these states have been among the most underpriced, despite having some of the highest flood risks.

Estimated Premium Changes under Risk Rating 2.0, as of December 2022



Source: GAO analysis of Federal Emergency Management Agency data. | [GAO-23-105977](#)

Data table for Estimated Premium Changes under Risk Rating 2.0, as of December 2022

	at full risk	1-49% increase	50-99% increase	100-199% increase	200-299% increase	more than 300% increase	Total
NumPolicies	1144026	705376	479756	493459	227215	316936	3366768
PctOfPolicies	33.98	20.95	14.25	14.66	6.75	9.41	100.00

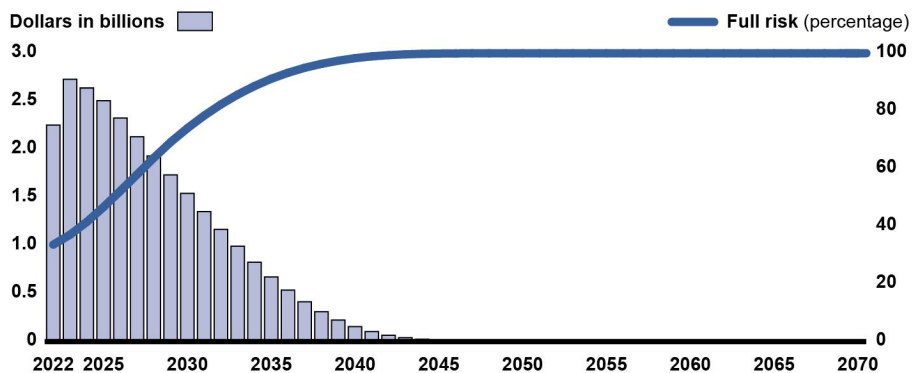
Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

Annual premium increases for most policyholders are limited to 18 percent by statute. These caps help address some affordability concerns in the near term, but have several limitations.

- First, the caps perpetuate an unfunded premium shortfall. GAO estimated it would take until 2037 for 95 percent of current policies to reach full-risk premiums, resulting in a \$27 billion premium shortfall (see figure below). The costs of shortfalls are not transparent to Congress or the public because they are not recognized in the federal budget and become evident only when NFIP must borrow from the Department of the Treasury after a catastrophic flood event.
- Second, the caps address affordability poorly. For example, they are not cost-effective because some policyholders who do not need assistance likely are still receiving it. Concurrently, some policyholders needing assistance likely are not receiving it, and the discounts will gradually disappear as premiums transition to full risk.
- Third, the caps keep NFIP premiums artificially low, which undercuts private-market premiums and hinders private-market growth.

An alternative to caps on annual premium increases is a means-based assistance program that would provide financial assistance to policyholders based on their ability to pay and be reflected in the federal budget. Such a program would make NFIP’s costs transparent and avoid undercutting the private market. If affordability needs are not addressed effectively, more policyholders could drop coverage, leaving them unprotected from flood risk and more reliant on federal disaster assistance. Addressing affordability needs is especially important as actions to better align premiums with a property’s risk could result in additional premium increases.

Estimated Premium Shortfall and Percentage of National Flood Insurance Program Policies at Full-Risk Premiums, by Calendar Year



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Estimated Premium Shortfall and Percentage of National Flood Insurance Program Policies at Full-Risk Premiums, by Calendar Year

year	net shortfall (left axis)	full risk (right axis)
2022	2252408408	0.336201456
2023	2728563557	0.370681919
2024	2638525198	0.414942247
2025	2505553711	0.466733662
2026	2325532369	0.52244677
2027	2131263869	0.579438186
2028	1931697026	0.637297259
2029	1734731516	0.691645589
2030	1542056608	0.739986581
2031	1352377803	0.783598246
2032	1168442602	0.822461865
2033	992603771.7	0.856611311
2034	826663832.8	0.886065899
2035	673334386.5	0.91136435
2036	535330503.8	0.932232399
2037	414631141.7	0.949596836
2038	311160492.5	0.963181022
2039	224540746.1	0.974078144
2040	155736626	0.982870603
2041	104053612.1	0.989125164
2042	66602679.91	0.993356182
2043	40899688.43	0.996139816
2044	24247384.8	0.998004388
2045	13667618.86	0.99888096
2046	7094309.54	0.999438697
2047	3604660.146	0.999713554
2048	1710083.966	0.999840137
2049	673829.5387	0.999965531
2050	304441.0728	0.999978011
2051	64198.42876	0.999989006
2052	9718.687846	0.999998217
2053	9166.584269	0.999999109
2054	8560.176257	0.999999109
2055	7785.950693	0.999999109
2056	6826.248331	0.999999406
2057	5684.749463	0.999999406
2058	4276.264346	0.999999406
2059	2551.181833	0.999999406
2060	450.9280152	0.999999406
2061	279.2618074	0.999999703
2062	263.3272639	0.999999703
2063	243.4933374	0.999999703
2064	219.1357301	0.999999703
2065	189.5354718	0.999999703

year	net shortfall (left axis)	full risk (right axis)
2066	153.8646916	0.999999703
2067	111.1702556	0.999999703
2068	60.35494917	0.999999703
2069	0.155835746	0.999999703
2070	0	1

Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

FEMA has had to borrow from Treasury to pay claims in previous years and would have to use revenue from current and future policyholders to repay the debt. NFIP’s debt largely is a result of discounted premiums that FEMA has been statutorily required to provide. In addition, a statutorily-required assessment has the effect of charging current and future policyholders for previously incurred losses, which violates actuarial principles and exacerbates affordability concerns. Even with this assessment, it is unlikely that FEMA will ever be able to repay the debt as currently structured. For example, with the estimated premium shortfalls, repaying the debt in 30 years at 2.5 percent interest would require an annual payment of about \$1.9 billion, equivalent to a 60 percent surcharge for each policyholder in the first year. Such a surcharge could cause some policyholders to drop coverage, leaving them unprotected from flood risk and leaving NFIP with fewer policyholders to repay the debt. Unless Congress addresses this debt—for example, by canceling it or modifying repayment terms—and the potential for future debt, NFIP’s debt will continue to grow, actuarial soundness will be delayed, and affordability concerns will increase.

Risk Rating 2.0 does not yet appear to have significantly changed conditions in the private flood insurance market because NFIP premiums generally remain lower than what a private insurer would need to charge to be profitable. Further, certain program rules continue to impede private-market growth. Specifically, NFIP policyholders are discouraged from seeking private coverage because statute requires them to maintain continuous coverage with NFIP to have access to discounted premiums, and they do not receive refunds for early cancellations if they switch to a private policy. By authorizing FEMA to allow private coverage to satisfy NFIP’s continuous coverage requirements and to offer risk-based partial refunds for midterm cancellations replaced by private policies, Congress could promote private-market growth and help to expand consumer options.

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Abbreviations

AMI	area median income
BISG	Bayesian Improved Surname Geocoding

CRS	Community Rating System
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
HFIAA	Homeowner Flood Insurance Affordability Act of 2014
HHI	household income
MBA	means-based assistance
NAIC	National Association of Insurance Commissioners
NFIP	National Flood Insurance Program
SFHA	special flood hazard area
WYO	Write Your Own

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July 31, 2023

The Honorable Sherrod Brown
Chairman
The Honorable Tim Scott
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable Patrick McHenry
Chairman
The Honorable Maxine Waters
Ranking Member
Committee on Financial Services
House of Representatives

The Honorable Bennie G. Thompson
Ranking Member
Committee on Homeland Security
House of Representatives

The Honorable Troy Carter
Ranking Member
Subcommittee on Emergency Management and Technology
Committee on Homeland Security
House of Representatives

The National Flood Insurance Program (NFIP) has competing policy objectives: being fiscally solvent while keeping flood insurance affordable for policyholders. Balancing these objectives has been challenging over the years, and a historical focus on affordability has come at the expense of solvency. In particular, Congress has required the Federal Emergency Management Agency (FEMA) to allow many policyholders to pay discounted premiums that do not fully reflect their properties' flood risk. This approach has contributed to a shortfall in revenue and insufficient funds to pay claims, causing FEMA to borrow about \$36.5 billion from the

Department of the Treasury since 2005. For these reasons, we placed NFIP on our High-Risk List in 2006.¹

The ratemaking methodology used until recently by FEMA has contributed to these challenges.² This legacy methodology had become outdated, as it had remained largely unchanged since NFIP was created in 1968. To modernize its ratemaking methodology and better align premiums with underlying flood risk at the individual property level, FEMA developed a new methodology called Risk Rating 2.0 and began implementing it in October 2021. Under Risk Rating 2.0, most policyholders will continue to experience premium increases.³ While these increases will help move NFIP toward fiscal solvency and more accurately signal to homeowners the flood risk of their property, they will also amplify affordability concerns.

In April 2017, we outlined a road map for comprehensive reform that, among other things, addresses the trade-offs between solvency and affordability.⁴ Since September 2017, NFIP has been operating under a series of short-term reauthorizations without comprehensive reform. In September 2023, NFIP's current authorization will expire.

We performed our work under the authority of the Comptroller General in light of congressional interest in FEMA's new ratemaking methodology and NFIP's impending reauthorization. This report examines (1) the actuarial soundness of the new methodology, (2) how premiums are changing for policyholders, (3) efforts to make flood insurance affordable for policyholders, (4) options for addressing program debt, (5) the potential implications of Risk Rating 2.0 for the private flood insurance market, and (6) FEMA's efforts to promote policyholder understanding of Risk Rating 2.0.

¹GAO, *High Risk: Efforts Made to Achieve Progress Need to Be Maintained and Expanded to Fully Address All Areas*, [GAO-23-106203](#) (Washington, D.C.: Apr. 20, 2023).

²Ratemaking is the process used to determine what prices (premiums) an insurer charges.

³Under the previous methodology, policyholders did not experience premium decreases. However, under Risk Rating 2.0, about 19 percent of policyholders experienced an immediate decrease in premiums.

⁴GAO, *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, [GAO-17-425](#) (Washington, D.C.: Apr. 27, 2017).

To examine the actuarial soundness of Risk Rating 2.0, we reviewed FEMA documentation and actuarial assumptions and methods used to develop premiums. We also reviewed the premiums, assessments, surcharges, and fees that policyholders pay and the costs these charges are designed to cover. Finally, we interviewed FEMA officials and an actuarial association and compared the methodology and results against actuarial standards and principles.

To examine how premiums are changing for policyholders, we analyzed NFIP policy data and Census Bureau data by geography and household income.⁵ We also used a statistical technique to estimate the probability that NFIP policyholders identify as a particular race or ethnicity and analyzed premium changes by these factors.⁶

To examine efforts to make insurance affordable for policyholders, we reviewed legislative proposals as well as policy goals established in our prior work.⁷ We analyzed NFIP policy data to estimate the time it might take for FEMA to transition current policyholders to full-risk premiums and the continued federal cost until the transition is completed. We accounted for annual premium increase caps, inflation rates, flood risk, and NFIP policy renewal, and we analyzed alternate scenarios for each of these assumptions to determine how our estimates might change. We also analyzed NFIP policy data and census data to estimate the potential costs associated with providing means-based affordability assistance for flood insurance.

To examine options for addressing program debt, we analyzed NFIP policy data and reviewed our previous work on NFIP, as well as reports from the Congressional Budget Office, Congressional Research Service,

⁵We assessed the reliability of NFIP data we analyzed by reviewing relevant documentation; testing the data to identify missing data, outliers, and any obvious errors; and comparing our results to published data. We also interviewed FEMA officials and reviewed relevant documentation. We determined that the NFIP data we analyzed were sufficiently reliable for the purposes of our report.

⁶We assessed the reliability of these estimates by conducting a literature review on the accuracy of the technique and by examining the completeness and distributions of the estimates for NFIP policyholders. We determined that the data were sufficiently reliable for estimating the race or ethnicity of NFIP policyholders.

⁷See [GAO-17-425](#).

FEMA, and others. We assessed the options against actuarial standards as well as policy goals we established in prior work.

To examine the potential implications of Risk Rating 2.0 for the private flood insurance market, we analyzed NFIP policy data and data from the National Association of Insurance Commissioners (NAIC) on private flood insurance.⁸ We also interviewed private insurers and reviewed laws and regulations that affect private insurers' ability to provide flood insurance. We assessed these laws and regulations against policy goals we established in prior work.

To examine FEMA's efforts to promote policyholder understanding of Risk Rating 2.0, we reviewed NFIP policy documents, FEMA's web materials, and training materials for agents and Write Your Own (WYO) insurers.⁹ We also interviewed FEMA officials and insurance agent associations. We compared this information against FEMA's strategic plan. A more detailed description of our scope and methodology is included in appendix I.

We conducted this performance audit from March 2022 to July 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Congress first proposed providing flood insurance in the 1950s, after it became clear that private insurance companies could not profitably provide flood coverage. Specifically, limited knowledge of flood risk at the time made it difficult for insurers to determine accurate premiums. This uncertainty, combined with the catastrophic nature of flooding, would

⁸We assessed the reliability of these data by comparing data elements to totals from other sources. We also interviewed NAIC officials about the accuracy and limitations of the data and their process for ensuring reliability. We determined that the data were sufficiently reliable to describe trends in the private flood insurance market.

⁹FEMA's WYO program allows private insurers to sell and service policies and adjust claims for NFIP.

have required premiums that many consumers might not have been able to afford. In 1968, Congress created NFIP to help reduce the escalating costs of providing federal flood assistance to repair damaged homes and businesses.¹⁰ NFIP was also intended to address the policy objectives of identifying flood risk, offering reasonable insurance premiums to encourage program participation, and promoting community-based floodplain management.¹¹

Community Participation, WYO Program, and Purchase Requirements

Community participation in NFIP is voluntary. For a community's residents to purchase flood insurance through the program, the community must participate in NFIP.¹² Participation requires communities to meet certain requirements, including enforcing regulations for land use, building standards, and new construction in special flood hazard areas (SFHA).¹³ FEMA uses community assistance visits and community assistance contacts to oversee community enforcement of NFIP requirements. Community assistance visits are on-site assessments of a community's floodplain management program and its knowledge and understanding of NFIP's floodplain management requirements.

In 1990, FEMA implemented a voluntary incentive program for communities participating in NFIP called the Community Rating System (CRS) to recognize and encourage community floodplain management activities that exceed the minimum NFIP requirements. According to FEMA, CRS's goals are to reduce and avoid flood damage to insurable property, strengthen and support the insurance aspects of NFIP, and foster comprehensive floodplain management. Communities may apply to

¹⁰Pub. L. No. 90-448, Tit. XIII, 82 Stat. 476, 572 (1968).

¹¹On June 1, 2023, 10 states and multiple local jurisdictions filed a lawsuit in the Eastern District of Louisiana against FEMA alleging, among other claims, that Risk Rating 2.0 is inconsistent with the objective of making flood insurance available when necessary at reasonable rates and that the agency's actions violated legal requirements of notice and comment rulemaking. *Louisiana, et. al. v. Mayorkas*, Case No. 2:23-cv-01839 (E.D. La. June 1, 2023). We do not address this lawsuit or any legal authorities discussed in the lawsuit in this report.

¹²As of May 2023, FEMA had identified 24,767 communities across the United States. Of these, 22,621 (91 percent) participated in NFIP.

¹³SFHAs are land areas that would be submerged by the floodwaters of the "base flood"—a flood that has a 1 percent chance of being equaled or exceeded in any given year.

join CRS if they are in full compliance with the minimum NFIP floodplain management requirements. FEMA groups CRS communities into classes based on their ratings. Communities can improve their ratings by earning CRS credits for activities such as increasing public information about flood risks, preserving open space, taking steps to mitigate flood damage, and preparing residents for floods. Policyholders in these communities receive a discount on their flood insurance premiums ranging from 5 to 45 percent, depending on the community's rating.

Consumers can purchase NFIP policies from a licensed property and casualty agent. Most agents sell policies underwritten through FEMA's WYO program, which allows private insurers to sell and service policies and adjust claims for NFIP. To become a WYO insurer, private insurers enter into an arrangement with FEMA to issue flood policies in their own name. The insurers must have experience in property and casualty insurance lines, be in good standing with state insurance departments, and be capable of selling and servicing the policies. WYO insurers do not assume any risk, and they receive an expense allowance for their services (currently about 30 percent of the premium a policyholder pays). Agents can also contract directly with FEMA to sell NFIP policies under the agency's NFIP Direct program.¹⁴ Consumers pay the same premium, regardless of how they purchase their policy.

Generally, homeowners with federally backed mortgages in SFHAs have been required by law to purchase flood insurance since 1973.¹⁵ As part of its role in administering NFIP, FEMA develops floodplain maps—historically known as Flood Insurance Rate Maps (FIRM)—that provide the basis for identifying which properties are required to purchase flood insurance by delineating the boundaries of SFHAs.¹⁶ Properties located in these areas that have certain federally backed mortgages are subject to the mandatory purchase requirement for flood insurance.

¹⁴As of January 2020, approximately 88 percent of NFIP policies were sold by companies participating in the WYO program, and 12 percent of policies were sold through the NFIP Direct Servicing Agent.

¹⁵42 U.S.C § 4012a. Federally backed mortgages are those made, insured, or guaranteed by federally regulated lenders or federal agencies, or purchased by the government-sponsored enterprises for housing—Fannie Mae and Freddie Mac.

¹⁶FEMA floodplain maps also serve as the basis for local floodplain management standards that communities must adopt and enforce as part of their NFIP participation. Prior to Risk Rating 2.0, FEMA also used its floodplain maps to set premiums.

Risk Rating 2.0 and Authority for Premium Increases

In October 2021, FEMA began implementing a new methodology for calculating flood insurance premiums, known as Risk Rating 2.0. Beginning on October 1, 2021, all new NFIP policyholders were required to pay the full-risk premium determined using Risk Rating 2.0, and all renewing policyholders were able to opt into Risk Rating 2.0 if it lowered their premium.¹⁷ Beginning on April 1, 2022, all NFIP policyholders became subject to the new methodology as their policies were renewed, so that as of April 1, 2023, all NFIP policies were subject to Risk Rating 2.0.¹⁸

Under the legacy methodology, some properties (also known as “pre-FIRM” properties) paid discounted “subsidized” premiums if they were built before floodplain maps for their area were published and flood risk in those locations was properly understood. Other policies paid discounted “grandfathered” premiums when a new flood map placed them into a flood zone that would have increased their premiums; these properties’ premiums continued to be based on the previous, lower-risk flood zone.

Premium increases for renewing NFIP policies are generally limited by statute.¹⁹ For most policies, FEMA is prohibited from increasing premiums by more than 18 percent per year.²⁰ FEMA is also required by law to increase premiums by 25 percent per year for certain other policies until they reach full risk, such as those covering pre-FIRM secondary

¹⁷FEMA refers to its premiums that encompass all of the elements of the individual risk transfer as full-risk premiums.

¹⁸NFIP policies generally have a 1-year term. We refer to annual premium amounts that reflect the policy term.

¹⁹42 U.S.C. § 4015(e).

²⁰FEMA also is prohibited from increasing premiums for certain groups of policies with the same flood risk classification by more than 15 percent per year on average. Such groups include properties that were built before flood maps were available for their area and properties that pay discounted premiums because they were newly mapped into an SFHA on or after April 1, 2015, if the applicant gets flood insurance coverage within a year of the mapping.

residences, businesses, and severe repetitive loss properties.²¹ FEMA is to increase premiums from 5 to 15 percent per year for certain other policies, including those covering properties that were built before flood maps were available for their area.

NFIP Funding Structure and Flow of Funds

FEMA generally pays claims and funds its operations from premium revenue from policyholders. In addition to paying for flood claims and adjustment expenses, FEMA uses premium revenue to pay other costs, including WYO expense allowances, interest on debt, operating expenses, and mitigation grants.

FEMA offers coverage to homeowners, renters, and businesses for buildings and their contents.²² In addition to premiums for building and contents coverage, NFIP policyholders pay separate assessments, surcharges, and fees (see table 1).

Table 1: National Flood Insurance Program (NFIP) Policyholder Assessments, Surcharges, and Fees

Charge	Authority	Purpose	Amount	FEMA authority
Reserve fund assessment	Biggert-Waters Flood Insurance Reform Act of 2012 (codified as amended at 42 U.S.C. § 4017a)	Establish and maintain a reserve fund to cover future claim and debt expenses, especially those from catastrophic disasters	18% of current premium per policy starting on April 1, 2020 (previously 15% since April 2016)	The Federal Emergency Management Agency (FEMA) has limited authority to determine the amount (statute specifies a reserve fund target and minimum annual payments into the fund until the target is reached).

²¹A severe repetitive loss property is an NFIP-insured structure that has incurred flood-related damage for which (a) four or more separate claims have been paid that exceeded \$5,000 each and cumulatively exceeded \$20,000, or (b) at least two separate claim payments have been made under such coverage, with the cumulative amount of such claims exceeding the fair market value of the insured structure. 42 U.S.C. § 4104c(h); 42 U.S.C. § 4014(h).

²²NFIP's maximum coverage limit for one-to-four-family residential policies is \$250,000 for buildings and \$100,000 for contents. For nonresidential policies, the maximum coverage limit is \$500,000 per building and \$500,000 for the building owner's contents. NFIP policies offer a variety of deductible options. Renters can purchase contents-only coverage. FEMA also offers Increased Cost of Compliance coverage, which provides up to \$30,000 to help cover the cost of mitigation measures following a flood loss when a property is declared to be substantially or repetitively damaged.

Charge	Authority	Purpose	Amount	FEMA authority
Homeowner Flood Insurance Affordability Act surcharge	Homeowner Flood Insurance Affordability Act of 2014 (codified at 42 U.S.C. § 4015a)	Offset the cost of discounted premiums	\$25 for primary residences; \$250 for all other properties	FEMA has no authority to determine the amount or eliminate the surcharge before statutory requirements for full-risk premiums are generally universally met—that is, nearly all NFIP policies must be at full-risk, with some exceptions.
Federal Policy Fee	Omnibus Budget Reconciliation Act of 1990 (codified as amended at 42 U.S.C. § 4014 (a)(1)(B)(iii))	Pay for administrative expenses incurred in carrying out flood insurance and floodplain mapping activities	\$47 for all policies under Risk Rating 2.0 (previously \$50 and \$25, depending on policy type, since October 2017)	FEMA has certain authority to determine the amount.

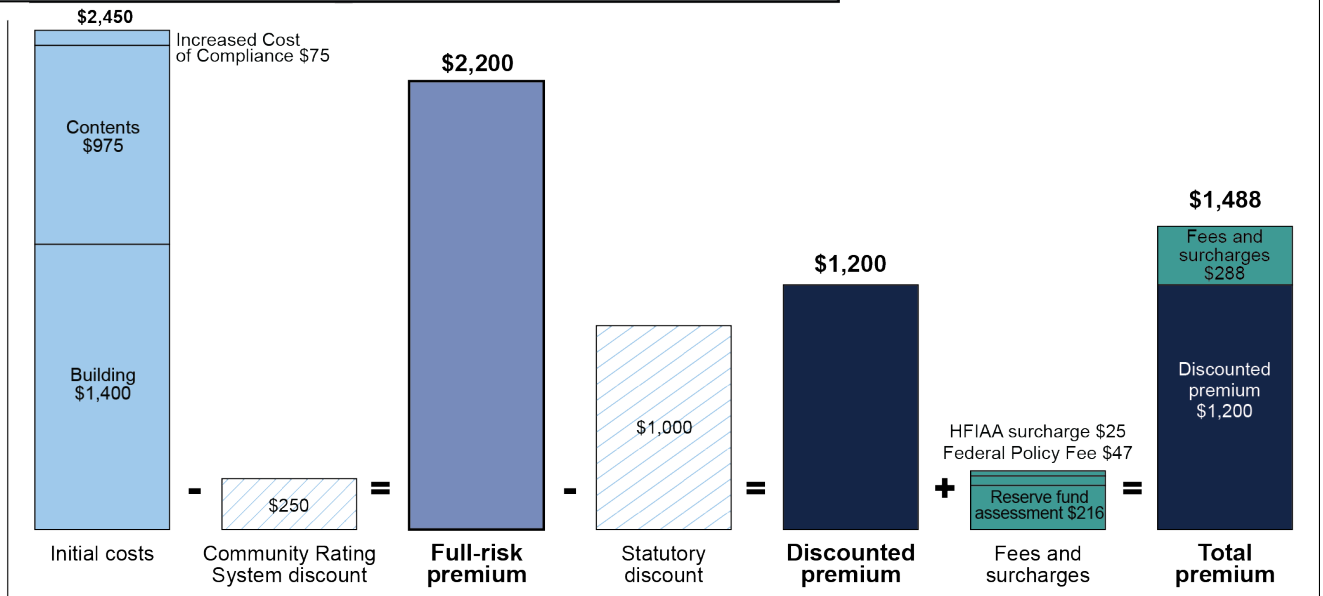
Source: GAO. | GAO-23-105977

Note: In addition to premiums, which are based on risk, NFIP policyholders pay separate assessments, surcharges, and fees.

For example, a hypothetical single-family primary residence had been paying an annual premium of \$1,017 prior to Risk Rating 2.0. Under Risk Rating 2.0, FEMA determined that this hypothetical policyholder should be paying \$2,200 to reflect the full risk of loss of the insured property. Because this policy is subject to an 18 percent statutory cap on annual premium increases, in the first year FEMA can only raise the premium by 18 percent, from \$1,017 to \$1,200. Therefore, in the first year of Risk Rating 2.0, the policyholder receives a \$1,000 discount relative to the full-risk premium of \$2,200. The policyholder then pays \$288 in additional assessments, surcharges, and fees, bringing the total payment to \$1,488. The premium will increase each year, subject to the statutory caps, until the full-risk premium is reached. Figure 1 illustrates the costs for this hypothetical policyholder in the first year under Risk Rating 2.0.

Figure 1: Policyholder Costs for a Hypothetical National Flood Insurance Program Policy

Policy Coverages and Endorsements			\$1,488.00
COVERAGE	LIMIT	DEDUCTIBLE	
Building	\$250,000	\$1,000	Total annual payment Includes premium, discounts, fees, and surcharges Payor: Policyholder(s)
Contents	\$100,000	\$1,000	
Premium Details			
Building premium			\$1,400
Contents premium			\$975
Increased Cost of Compliance premium			\$75
Community Rating System discount			(\$250)
Full-risk premium			\$2,200
- Annual increase cap discount			(\$1,000)
Discounted premium			\$1,200
Fees and surcharges			
- Reserve fund assessment			\$216
- Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) surcharge			\$25
- Federal Policy Fee			\$47
Total annual payment (premium, discounts, fees, and surcharges)			\$1,488



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Figure 1: Policyholder Costs for a Hypothetical National Flood Insurance Program Policy

Details	Costs
Building premium	\$1,400
Contents premium	\$975
Increased Cost of Compliance premium	\$75
Community Rating System discount	(\$250)
Full-risk premium	\$2,200
Annual increase cap discount	(\$1,000)
Discounted premium	\$1,200
Fees & surcharges	
Reserve fund assessment	\$216
HFIAA surcharge	\$25
Federal Policy Fee	\$47
Total annual payment	\$1,488

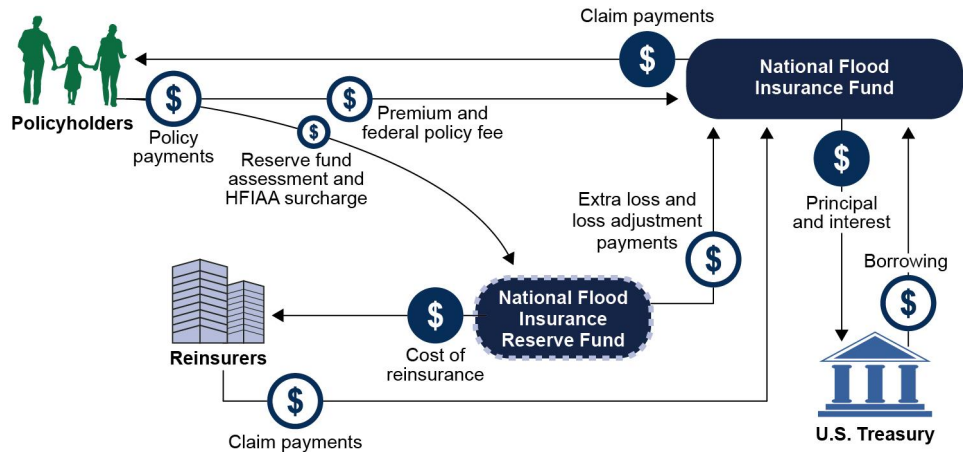
Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

FEMA also has reinsurance agreements and borrowing authority from Treasury to fulfill its obligations. Collections are deposited into an insurance fund, and some are transferred to a reserve fund (see fig. 2).²³ In most years, NFIP premium revenue is sufficient to pay claims and generate a cash surplus. In years when losses exceed premium revenue, FEMA uses any amounts in these funds to pay claims, first from the insurance fund and then, if necessary, from the reserve fund. When individual or accumulated losses in a year exceed a certain threshold, FEMA can receive payouts from its reinsurance agreements. When

²³The National Flood Insurance Fund was established in the U.S. Treasury by the National Flood Insurance Act of 1968. The National Flood Insurance Reserve Fund was established by the Biggert-Waters Flood Insurance Reform Act of 2012 to help meet future NFIP obligations and principal and interest payments on any outstanding Treasury loans (42 U.S.C. § 4017a). Specifically, FEMA is required to establish a reserve fund with a balance equal to 1 percent of the sum of the total potential loss exposure of all outstanding flood insurance policies in force in the prior fiscal year. FEMA's total exposure in fiscal year 2022 was \$1.28 trillion, which equates to a target reserve fund balance of \$12.8 billion for fiscal year 2022. FEMA is required to contribute at least 7.5 percent of its target balance each year until it achieves the target reserve fund balance. This equates to a reserve fund contribution of \$960 million for fiscal year 2022.

revenue, reinsurance, and any accumulated surplus are insufficient, FEMA has authority to borrow from the Treasury.²⁴

Figure 2: National Flood Insurance Program (NFIP) Flow of Funds



Source: GAO. | GAO-23-105977

Note: All policyholder payments are deposited into the National Flood Insurance Fund, but the reserve fund assessment and Homeowner Flood Insurance Affordability Act (HFIAA) surcharge are transferred into the National Flood Insurance Reserve Fund.

Risk Rating 2.0 Significantly Improves Ratemaking, but Certain Aspects of NFIP Limit Actuarial Soundness

With Risk Rating 2.0, FEMA Improved Ratemaking by Applying Actuarial Principles

In developing Risk Rating 2.0, FEMA applied actuarial principles to better align premiums with flood risk, representing a substantial improvement from its legacy ratemaking methodology. The methodology and process FEMA used to develop full-risk premiums in Risk Rating 2.0 generally

²⁴42 U.S.C. § 4016. Congress authorized FEMA to borrow from the Treasury when needed, up to a preset statutory limit. Originally, Congress authorized a borrowing limit of \$1 billion and increased it significantly in 2005 and 2013. The limit currently stands at \$30.425 billion.

reflect statutory premium requirements and relevant actuarial principles and standards.²⁵

According to FEMA, Risk Rating 2.0 was the first change in its ratemaking methodology since the 1970s. The legacy methodology had become out of date for several key reasons, including that it largely based premiums on a property's height relative to the base flood elevation and broadly defined flood zone and charged the same premium nationwide based on these characteristics.²⁶ The legacy rating methodology also did not capture many potential flood sources or reflect flood risk from catastrophic events. We previously identified a number of challenges with this ratemaking process.²⁷

Under Risk Rating 2.0, FEMA better aligns premiums with flood risk and takes advantage of new technology and advances in the insurance industry's understanding of flood risk. For instance, Risk Rating 2.0 does the following:

- **Ties premiums to individual property flood risk rather than to broadly defined flood zones.** Premiums under the legacy methodology relied heavily on a structure's flood zone as depicted on FEMA's floodplain maps.²⁸ Structures within each flood zone generally were rated similarly, meaning that while properties may have had different premiums because of other variables (e.g.,

²⁵42 U.S.C. § 4014(a). Casualty Actuarial Society, *Statement of Principles Regarding Property and Casualty Ratemaking* (Arlington, Va.: May 7, 2021). The Actuarial Standards Board's relevant Actuarial Standards of Practice include 12 (Risk Classification for All Practice Areas); 23 (Data Quality); 25 (Credibility Procedures); 29 (Expense Provisions in Property/Casualty Insurance Ratemaking); 30 (Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking); 38 (Catastrophe Modeling); 39 (Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking); 53 (Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention); and 56 (Modeling).

²⁶Under the legacy methodology, SFHAs included two categories of flood zones: A (high-risk noncoastal) and V (high-risk coastal). Non-SFHAs generally included three categories: B, C, and X (low to moderate risk).

²⁷See GAO, *National Flood Insurance Program: Continued Progress Needed to Fully Address Prior GAO Recommendations on Rate-Setting Methods*, [GAO-16-59](#) (Washington, D.C.: Mar. 17, 2016) and *Flood Insurance: FEMA's Rate-Setting Process Warrants Attention*, [GAO-09-12](#) (Washington, D.C.: Oct. 31, 2008).

²⁸FEMA floodplain maps are the official maps of communities on which FEMA has delineated the SFHA and base flood elevations applicable to the community.

occupancy type and elevation), the premium did not vary based on the property's particular geographic location within the zone. Risk Rating 2.0 calculates premiums based on the characteristics of each individual insured structure and no longer uses the flood zone.

- **Integrates input from commercial catastrophe models.** Catastrophe models are computerized processes that simulate potential losses due to catastrophic events, such as floods.²⁹ Their use has become standard practice in the insurance industry since they were first developed in the 1980s. The models have evolved significantly as technology has advanced and exposure data have improved. Under Risk Rating 2.0, FEMA uses catastrophe models to estimate the annual losses from potential flood events.
- **Accounts for more sources of flooding.** The previous methodology accounted only for coastal and riverine flooding, but Risk Rating 2.0 also includes pluvial (rainfall), Great Lakes, coastal erosion, and tsunami flooding.
- **Accounts for the replacement cost value of the property.** NFIP residential coverage is generally limited to \$250,000. Although the legacy methodology did not adjust premiums based on the value of the insured property, insured homes with values above the \$250,000 limit still affected NFIP's risk exposure. For example, \$250,000 in coverage was priced the same for a \$250,000 home as for a \$5 million home. However, this approach was inequitable because the same flooding event is likely to cause more damage to a higher-value structure. For example, \$250,000 in damage to a \$250,000 home—a total destruction of home value—would occur only with an infrequent severe flood event. In contrast, \$250,000 of damage to a \$5 million home—a destruction of just 5 percent of home value—could occur with far less severe and more frequent flood events. As a result, the \$5 million home has a much higher probability of incurring \$250,000 in damage than does a \$250,000 home, and should have a higher premium. By not accounting for this difference in probabilities, the legacy rating methodology tended to undercharge homes that are more expensive and overcharge homes that are more modest. By incorporating replacement cost value into its ratemaking, Risk Rating 2.0 more accurately accounts for differences in flood risk from properties of different values.

²⁹Actuarial standards of practice define a catastrophe model as a model of low-frequency events with high-severity or widespread potential effects. Catastrophe models may be used to explain a system, to study effects of different components, or to derive estimates.

In its Risk Rating 2.0 ratemaking process, FEMA incorporates the damage or loss estimates of multiple catastrophe models, which include commercial models as well as FEMA models that use data from other government agencies, including the U.S. Army Corps of Engineers. These models do not produce suggested premium rates, but FEMA uses the output of these models in its ratemaking process. According to FEMA, the agency makes use of multiple catastrophe models because, although each model has its own strengths, no single model adequately covers all circumstances. For example, FEMA uses data from the U.S. Army Corps of Engineers to model damage and losses in areas behind levees, and it uses data from the National Oceanic and Atmospheric Administration and other agencies to model coastal flooding. Catastrophe models, including those used by FEMA, are generally based on simulations and thus involve some amount of uncertainty.

NFIP is statutorily required to develop premiums that are actuarially sound.³⁰ According to actuarial principles, an actuarially sound premium is an estimate of the expected value of future costs of the individual risk transfer.³¹ These expected costs include insurance claims, claims-related expenses, commissions, operational expenses, reinsurance costs, and a provision for retained risk.³² Actuarial principles also state that an actuarially sound premium should be reasonable and should not be excessive, inadequate, or unfairly discriminatory. In developing Risk Rating 2.0, FEMA followed the statutory definition of actuarial rates and followed recognized actuarial principles and actuarial standards of

³⁰42 U.S.C. § 4014(a).

³¹Casualty Actuarial Society, *Statement of Principles*. Further, the Actuarial Standards Board sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice, which describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services. According to Actuarial Standard of Practice 1, “actuarial soundness” has different meanings in different contexts and might be dictated or imposed by an outside entity. In rendering actuarial services, if the actuary identifies a process or result as “actuarially sound,” the actuary should define the meaning of “actuarially sound” in that context.

³²Reinsurance is insurance for insurers. The net cost of reinsurance includes the excess of reinsurance premiums paid to the reinsurer over recoveries for claims from the reinsurer. Retained risk is the exposure that an insurer chooses to cover itself rather than transferring it to a third party, such as a reinsurer, and includes the risk of random variation from expected costs plus the risk of systematic underestimation of expected costs. In private-sector contexts, a provision for risk is also referred to as a cost of capital.

practice.³³ FEMA refers to its premiums that encompass all of the elements of the individual risk transfer as full-risk premiums.

The process of ratemaking under Risk Rating 2.0 included three core components: creating market baskets representative of single-family homes, estimating NFIP's aggregate target premium, and allocating individual premiums to policyholders. Creating market baskets involved grouping U.S. single-family homes with several of the same risk factors using geographic information system data and commercially available data.³⁴ FEMA incorporated the market baskets into catastrophe models from several vendors and modeled NFIP's flood risk using policy data as of May 31, 2018. According to FEMA officials, they updated their assumptions using data as of May 31, 2020.

FEMA then developed NFIP's aggregate target premium—the total premium for the entire program—using the average annual losses generated from the catastrophe models, as well as provisions for WYO expense allowances, loss adjustment expenses, and the net cost of reinsurance and retained risk.

FEMA then used the aggregate target premium to determine individual policyholder premiums based on the risk factors of their insured properties and the potential flood sources. FEMA used rating variables, which are characteristics that have been shown through analysis to correlate with the likelihood of losses. When developing rating factors, FEMA compared the annual expected losses derived from the catastrophe models to NFIP's historical losses from January 1, 1992, to June 30, 2018, and adjusted accordingly. Specifically, FEMA compared a range of modeled losses for each market basket of properties to the historical losses experienced by actual policies within that market basket to verify whether the historical losses fell into the model's estimated range.

³³The statutory definition of an actuarial rate is one that covers all costs, as prescribed by principles and standards of practice in ratemaking adopted by the American Academy of Actuaries and the Casualty Actuarial Society, including an estimate of the expected value of future costs, all costs associated with the transfer of risk, and the costs associated with an individual risk transfer with respect to risk classes, as defined by FEMA. 42 U.S.C. § 4014 (a)(1)(B)(iv).

³⁴Data sources included the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and the U.S. Army Corps of Engineers.

FEMA performed a rating factor analysis by peril separately for single-family homes not protected by a levee, single-family homes protected by a levee, and non-single-family homes.³⁵ FEMA's analyses identified a set of rating factors that reflect several characteristics:

- location (including distance to flooding sources and elevation relative to flooding sources);
- structural characteristics (including occupancy type, foundation type, first floor height, number of floors, construction type, existence of flood openings, and location of machinery and equipment); and
- replacement cost value, coverage, and deductible amounts.

All of these rating factors combined allow FEMA to group policyholders with similar risks together to help determine the full-risk premium. FEMA officials told us they plan to review and update premiums to continue using the best available data, science, and models. They also plan to account for changes in other factors, such as flood risk and their understanding of it, as well as changes in inflation, expenses, fees, and policyholder population.

Some Additional Policyholder Charges Limit Actuarial Soundness

In addition to premiums, NFIP policyholders pay separate charges that are determined outside of the actuarial ratemaking process. These additional charges are not proportional to the individual risk of the insured property and result in some policyholders being charged more than the actuarial cost of the risk transfer.

- **Reserve fund assessment.** FEMA is statutorily required to establish and maintain a reserve fund to provide additional funds to cover future claims and debt expenses, especially those from catastrophic disasters. Specifically, FEMA must move toward a target balance of 1 percent of insurance-in-force by making minimum annual contributions of 7.5 percent of the target balance until the fund

³⁵Risk Rating 2.0 accounts for the level of risk reduction that levees provide to the buildings located behind them. Levees reduce flood risk but do not eliminate it. According to FEMA, limitations of levees include their capacity to reduce flooding in leveed areas (from overtopping) and their ability to perform adequately during flood events, and this information is fundamental in assessing the risk.

reaches the target.³⁶ FEMA does so by implementing a reserve fund assessment, which FEMA has set at 18 percent of the premium since 2020.³⁷ FEMA applies the reserve fund assessment to the discounted premium rather than the full-risk premium. As a result, the assessment is not proportional to the actual risk of the property.³⁸ FEMA officials told us that they view the reserve fund assessment as a capitalization charge that is separate from the full-risk premium. However, FEMA also includes in its full-risk premium a risk load for the risk of future catastrophic losses, in accordance with actuarial principles. As a result, the statutorily required reserve fund assessment results in policyholders paying a charge for catastrophic losses in two places, and being at risk of overpaying the cost of risk transfer, especially policyholders paying full-risk premiums.³⁹

- **Homeowner Flood Insurance Affordability Act (HFIAA) surcharge.** The HFIAA surcharge, which was statutorily established and offsets the cost of discounted premiums, is set at \$25 for primary residences and \$250 for other properties. Because the HFIAA surcharge is a flat amount, it is not tied to the risk of the individual property, and while the \$25 surcharge for primary residences is relatively small, the \$250 surcharge for other properties is not. In addition, while the HFIAA surcharge offsets the cost of discounted premiums, it is charged to all policyholders, including those already paying the full-risk premium, so that these policyholders are partially subsidizing policyholders paying discounted premiums. The amount of

³⁶42 U.S.C. § 4017a(b)(1),(d)(1).

³⁷FEMA initially set the reserve fund assessment at 5 percent but increased it to 15 percent in April 2016 and 18 percent in April 2020.

³⁸For example, a policyholder who pays a full-risk premium would pay a higher reserve fund assessment than a policyholder with the same risk who pays a discounted premium.

³⁹FEMA is required to develop rates based on actuarial principles and in consideration of risk to include operating and administrative expenses. 42 U.S.C. § 4014. This includes a risk load for catastrophic losses, according to FEMA officials. Further, FEMA officials stated that Risk Rating 2.0 includes this catastrophic load in the premium and that this premium must be deposited into the National Flood Insurance Fund. Additionally, FEMA is generally required by statute to increase premiums to fund the reserve fund to meet the target or reserve ratio for the year. 42 U.S.C. § 4017a. FEMA officials stated that the reserve fund assessment should not be viewed as an actuarial charge, but as a congressional mandate. Additionally, FEMA officials stated that the reserve fund assessment is subject to the aggregate annual premium increase cap of 18 percent a year. According to FEMA, due to this constraint, policyholders who are paying their full-risk rate will be charged the full reserve fund assessment, while those policyholders receiving a premium increase discount will not pay the full reserve fund assessment. Additionally, all premium increases to build up the reserve fund must be deposited into the reserve fund. 42 U.S.C. § 4017a.

the HFIAA surcharge is set in statute, so FEMA lacks the authority to eliminate or reduce it until statutory requirements for full-risk premiums are generally universally met—that is, nearly all NFIP policies must be at full-risk, with some exceptions.

Because the full-risk premium covers the full cost of the risk transfer, including a risk load, policyholders paying the full-risk premium plus the reserve fund assessment and the additional HFIAA surcharge are paying more than the actuarially determined cost of insurance. Moreover, the size and duration of the reserve fund assessment will vary with claims experience. For example, if the reserve fund is used to help pay claims in a catastrophic loss year, the reserve fund assessment might need to be increased, extended, or reinstated to reach the target balance. This would result in current or future policyholders paying for past losses, in violation of actuarial principles.

To the extent that the reserve fund assessment and HFIAA surcharge are not proportional to the individual risk of the insured property or result in policyholders paying more than an actuarially justified cost of the risk transfer, the total costs a policyholder pays will not be actuarially sound. Specifically, FEMA cannot ensure that the amounts charged align with the flood risk of specific properties, which limits the ability of these charges to accurately signal flood risk and results in some policyholders overpaying and others potentially underpaying. Were Congress to authorize and require FEMA to incorporate the reserve fund assessment, to the extent necessary based on actuarial principles, into the risk charge within the full-risk premium, it would enhance the actuarial soundness of the total costs policyholders pay. Further, were Congress to repeal the HFIAA surcharge and authorize and require FEMA to replace forgone revenue with actuarially determined premium adjustments, it would enhance the actuarial soundness of the total costs policyholders pay.

CRS Discounts Are Not Actuarially Justified

Premium discounts provided under the CRS program are not actuarially justified and are paid for, in large part, through a cross-subsidization by policyholders not receiving the discount. As previously discussed, FEMA uses premium discounts ranging from 5 to 45 percent to promote CRS program goals: to reduce and avoid flood damage to insurable property, to strengthen and support the insurance aspects of NFIP, and to foster

comprehensive floodplain management.⁴⁰ As a community engages in additional eligible activities, its residents become eligible for larger premium discounts.

FEMA officials told us they set full-risk premiums so that after applying the CRS discounts, the total premium revenue within each state represents the full aggregate risk of all policies in that state. This approach results in a cross-subsidy because policyholders outside of CRS communities are paying higher premiums than are actuarially justified to subsidize the discounts that policyholders in participating CRS communities receive.

Further, it is likely that policyholders receiving the CRS discount are paying lower premiums that do not fully reflect their flood risk. The amounts of CRS discounts—both to individual properties and program-wide—are not closely linked to potential loss reduction of currently insured properties. While the activities that FEMA promotes through CRS are important, few of them directly mitigate flood risk in the policy period.⁴¹ FEMA officials told us that CRS helps improve future resilience to flood risk but does little to reduce the estimated flood losses of the properties NFIP currently insures.⁴² For example, four eligible activities reduce potential flood damage: floodplain management planning, acquisition and relocation, flood protection, and drainage system maintenance.⁴³ However, CRS provides discounts for 15 other activities related to public information, mapping and regulations, and warning and response that do

⁴⁰As of May 2023, 22,621 communities participated in NFIP. As of April 2023, 1,504 NFIP communities received a CRS discount, and 454 received a discount of at least 20 percent.

⁴¹Until October 2021, discounts were available only to properties in SFHAs, but under Risk Rating 2.0, FEMA provides discounts to all policies in a participating community.

⁴²Broadly speaking, resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to actual or potential adverse events.

⁴³FEMA defines floodplain management planning as the adoption of flood hazard mitigation or natural functions plans using the CRS planning process, or conducting repetitive loss area analyses. Acquisition and relocation refer to acquiring insurable buildings and relocating them out of the floodplain and leaving the property as open space. Flood protection of the insured building includes activities such as floodproofing, elevation, or minor structural projects. Drainage system maintenance includes annual inspections of channels and retention basins and maintenance of the drainage system's flood-carrying and storage capacity

not reduce the potential for flood damage to currently insured properties.⁴⁴ While we recognize the value of such activities, it is not actuarially justifiable to incentivize them through premium discounts or through overcharging policyholders outside of CRS communities. FEMA has not evaluated the actuarial benefits of these other activities in terms of loss mitigation or other means of incentivizing them.

In addition, FEMA officials stated that some of the rating variables used in Risk Rating 2.0 already account for the reduced flood risk that results from certain CRS activities in calculating full-risk premiums. For example, one rating variable is a property's elevation height in relation to flood sources. Elevating properties is one activity a community could undertake to receive a CRS discount. As a result, some properties could receive lower premiums because they are elevated and also receive a CRS discount for being located in a community that is working to elevate properties. At the same time, nonelevated properties in the community would still receive the CRS discount without having received any risk-reduction benefit from the community's activities.

Actuarial principles suggest that the amount of premium discount should align with the amount of loss reduction for each individual property. Further, while statute requires FEMA to apply CRS discounts, it does not prescribe the amount of the discounts or the specific community activities FEMA should use to determine them.⁴⁵ Rather, it says that FEMA should provide CRS discounts based on the estimated reduction in flood risk from the measures adopted by the community.

If FEMA does not adjust CRS ratings so that only community activities that can be actuarially justified to reduce flood risk contribute toward a community's rating and does not incorporate discounts into the full-risk premium based on the actuarial evaluation of risk reduction, then premiums will not be actuarially sound, and policyholders will continue over- or underpaying premiums. Further, by evaluating other means of incentivizing desirable community-wide activities that cannot be

⁴⁴Public information activity categories include elevation certificates, map information service, outreach projects, hazard disclosure, flood protection information, flood protection assistance, and flood insurance promotion. Mapping and regulations activity categories include floodplain mapping, open space preservation, higher regulatory standards, flood data maintenance, and stormwater management. Warning and response activity categories include flood warning and response, levees, and dams.

⁴⁵42 U.S.C. § 4022(b).

actuarially justified, FEMA could help ensure such activities continue if they are no longer incentivized through CRS discounts.

FEMA Has Not Fully Reported on Risk Rating 2.0's Actuarial Soundness and Its Effect on NFIP's Fiscal Exposure

Implementing Risk Rating 2.0 is helping FEMA to address NFIP's historical premium inadequacy and overall actuarial soundness, but Congress and the public do not have certain information on the new methodology and NFIP's long-term fiscal outlook.

FEMA has communicated Risk Rating 2.0's actuarial soundness and NFIP's fiscal outlook to Congress through three primary means:

- **Legislative reform proposals.** In May 2022, the Department of Homeland Security submitted to Congress 17 legislative proposals that included establishing a "Sound Financial Framework."⁴⁶ According to FEMA, the framework would call for NFIP to pay all claims for a flood event that has a 5 percent chance of being exceeded in any given year—about \$10.5 billion, similar to claims from Hurricane Harvey in 2017. Congressional action on an emergency supplemental appropriation would be needed only if claims exceeded this amount. FEMA said this framework would require the implementation of several reforms.⁴⁷ FEMA estimated the framework would result in a 75 percent likelihood that NFIP could manage flood events up to the established ceiling and have a positive balance in its available funds at the end of a 10-year period.
- **Budget request.** In its 2024 budget request, FEMA estimated the budgetary effects of its proposed reforms for establishing the

⁴⁶Department of Homeland Security, *Legislative Reform Package* (Washington, D.C.: May 11, 2022).

⁴⁷To achieve the Sound Financial Framework, FEMA proposed (1) canceling the existing debt, (2) eliminating interest on future debt, (3) decreasing NFIP's borrowing authority from \$30.425 billion to two-thirds of total expected premiums in force in the following fiscal year, (4) directing annual equalization payments to cover premium shortfalls from discounted premiums, (5) allowing the ability to transfer funds between the insurance and reserve funds, (6) eliminating the Reserve Fund Ratio, and (7) eliminating the HFIAA surcharge.

framework.⁴⁸ FEMA also requested an equalization payment to cover what it estimated to be the cost of premium discounts in fiscal year 2024.

- **Debt report to Congress.** In August 2022, FEMA submitted to Congress a report on NFIP's debt as of March 2022.⁴⁹ The report communicated the uncertainty of flood losses, NFIP's estimated annual losses for a 10-year period, and projections of NFIP's debt and financial position over this period.

In addition to these reports, FEMA posted on its website a report from its actuarial contractor that describes the actuarial modeling and data sources used in developing Risk Rating 2.0 premium rates.

These communications provide important information on NFIP, but Congress and the public lack some information because these communications are fragmented and incomplete. For example, FEMA's Sound Financial Framework communicates NFIP's estimated capacity if it were to receive annual equalization payments for the cost of premium discounts and if its other requested reforms were implemented. However, FEMA did not estimate NFIP's current capacity (absent these reforms) or estimate its future capacity for either scenario. The framework also does not include a plan to regularly update these estimates. Further, FEMA has designed full-risk premiums under Risk Rating 2.0 based on an estimated average annual loss target but has not incorporated this estimate into these communications. Moreover, while FEMA estimated premium revenue and shortfalls for a 10-year period when preparing its budget request, the actual budget request only included the estimates for 2024. In addition, the 10-year projections in FEMA's budget request and debt report included a single baseline scenario rather than a range of scenarios that would illustrate the uncertainty of NFIP's future financial condition.

One of FEMA's strategic objectives is empowering risk-informed decision-making, and FEMA's strategic plan states that the availability of, access to, and understanding of future conditions data and modeling within

⁴⁸Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2024—Department of Homeland Security* (Washington, D.C.: Mar. 9, 2023).

⁴⁹Department of Homeland Security, *National Flood Insurance Program Semi-Annual Debt Repayment Report, March 31, 2022* (Washington, D.C.: Aug. 30, 2022).

FEMA must be expanded.⁵⁰ In this regard, a comprehensive annual actuarial report could help better inform Congress and the public about Risk Rating 2.0's actuarial soundness and NFIP's fiscal outlook.⁵¹ Ensuring that such a report is informed by relevant actuarial standards would enhance its usefulness and credibility.⁵²

Elements of a comprehensive annual actuarial report could include communicating the accuracy and adequacy of NFIP's premiums in managing the program's fiscal exposure. The report could also communicate the target loss level that full-risk premiums are designed to cover, the uncertainty associated with the full-risk premium, and the likelihood that the estimated premium revenue will cover the target loss for the policy year. Further, the report could evaluate and communicate estimated premium revenue and shortfall, the likelihood of additional Treasury borrowing, and NFIP's short- and long-term fiscal outlook under a variety of scenarios for future claims experience and policy renewals, lapses, and new policies. Without a comprehensive annual actuarial report on Risk Rating 2.0's soundness and NFIP's fiscal outlook, available information for overseeing the program will continue to be fragmented and incomplete.

Risk Rating 2.0 Is Aligning Premiums with Risks, but Some Policyholders Face Increasing Affordability Concerns

Premiums Are Increasing for Many Policies but Will Better Reflect Flood Risk

As noted earlier, a key goal of Risk Rating 2.0 is to more closely align premiums with individual property flood risk. Because legacy premiums

⁵⁰Federal Emergency Management Agency, *2022–2026 FEMA Strategic Plan: Building the FEMA Our Nation Needs and Deserves* (Washington, D.C.: 2021).

⁵¹Examples of comprehensive annual reports for other programs that involve actuarial assessments of risk include the annual trustees' reports for Social Security and Medicare and the annual projections report produced by the Pension Benefit Guaranty Corporation.

⁵²For more information, see, for example, Actuarial Standards of Practice 41 (Actuarial Communications), 46 (Risk Evaluation in Enterprise Risk Management), 47 (Risk Treatment in Enterprise Risk Management), and 56 (Modeling).

on many policies do not fully reflect the underlying flood risk, aligning premiums with risks will require premium increases on most policies.⁵³ As of December 2022, NFIP policyholders paid a median annual premium of \$689.⁵⁴ However, the median annual full-risk premium was \$1,288.⁵⁵ As a result, the median premium will need to increase by almost 90 percent to reach full risk.⁵⁶

However, different policies will require different premium changes to align them with actual risk and reach full-risk premiums. For example, 35 percent of policies will require an increase of less than 100 percent, while about 9 percent will require an increase of 300 percent or more (see fig. 3). Overall, about 66 percent of policies still required premium increases as of December 2022. In September 2021, under the legacy methodology, FEMA considered about 22 percent of its policies to be paying premiums that were less than full risk.⁵⁷ In contrast, the fact that 66 percent of policies are paying less than full-risk premiums under Risk

⁵³As discussed previously, NFIP policyholders pay premiums, which are based on risk, as well as separate assessments, surcharges, and fees. In this section, we analyzed the entire amount a policyholder pays, including building premium, contents premium, Increased Cost of Compliance premium, severe repetitive loss premium, reserve fund assessment, HFIAA surcharge, Federal Policy Fee, and probation surcharge. CRS discounts, when applicable, are also reflected. For simplicity and clarity, in this section we refer to the total policyholder payments as “premiums.”

⁵⁴For condominiums, NFIP offers a Residential Condominium Building Association Policy, which covers all units within a condominium. As a result, it is necessary to adjust for the number of condominium units to determine the number of policies. We account for the number of condominium units when reporting the aggregate number of NFIP policies, but otherwise we treat these condominium policies as single policies.

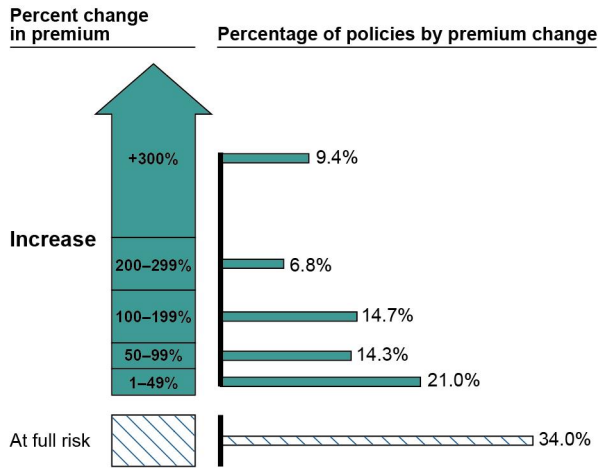
⁵⁵FEMA determined full-risk premiums for policies subject to Risk Rating 2.0, which includes new policies beginning October 1, 2021, and renewed policies beginning April 1, 2022. We analyzed NFIP data for policies in effect on December 31, 2022, which included full-risk premiums that were valid as of that date for 89 percent of NFIP policies. Our analysis excludes the remaining policies, which were due for renewal from January 1, 2023, to March 31, 2023, because FEMA had not yet determined their full-risk premiums. Full-risk premiums are FEMA’s best estimates of the premium that would need to be charged to cover the estimated cost of the risk transfer and associated expenses for the year FEMA determined them. As noted earlier, FEMA officials told us they will modify premiums as input factors change (such as housing values and flood risk) and as they continue to improve their understanding of flood risk.

⁵⁶FEMA’s estimates of full-risk rates reflect current WYO expense allowances (about 30 percent of the premium a policyholder pays). As premiums increase with implementation of Risk Rating 2.0, the amount of expense allowance per policy will increase. Any changes to the compensation structure would affect the calculation of full-risk rates.

⁵⁷Under the legacy methodology, subsidized and grandfathered premiums were considered less than full risk.

Rating 2.0 indicates that the legacy system significantly underestimated flood risk and that Risk Rating 2.0 is correcting this underpricing.

Figure 3: Estimated Future Premium Changes under Risk Rating 2.0, as of December 2022



Source: GAO analysis of Federal Emergency Management Agency (FEMA) data. | GAO-23-105977

Data table for Figure 3: Estimated Future Premium Changes under Risk Rating 2.0, as of December 2022

	at full risk	1-49% increase	50-99% increase	100-199% increase	200-299% increase	more than 300% increase	Total
NumPolicies	1144026	705376	479756	493459	227215	316936	3366768
PctOfPolicies	33.98	20.95	14.25	14.66	6.75	9.41	100.00

Source: GAO. | GAO-23-105977

Note: This analysis includes the 89 percent of policies subject to Risk Rating 2.0 and in effect on December 31, 2022. The remaining 11 percent of policies were due for renewal from January 1, 2023, to March 31, 2023, at which point FEMA determined their full-risk premiums. About 19 percent of policies in effect on September 30, 2021, received premium decreases under Risk Rating 2.0. The "at full risk" category includes these policies; new policies, most of which were subject to full-risk premiums; and policies that reached full-risk premiums upon renewal because the required increase was less than the statutory cap on annual premium increases for those policies.

While FEMA is increasing premiums for most policies, it has reduced premiums on about 19 percent of policies, which indicates that FEMA has determined that the anticipated cost of insuring these properties is lower than it had previously determined. According to FEMA, many of these properties have lower replacement cost value, and by accounting for it, Risk Rating 2.0 is able to offer a lower premium. FEMA is implementing the full amount of these premium decreases immediately upon policy renewal, whereas it must phase in premium increases, often over many years, as required by law.

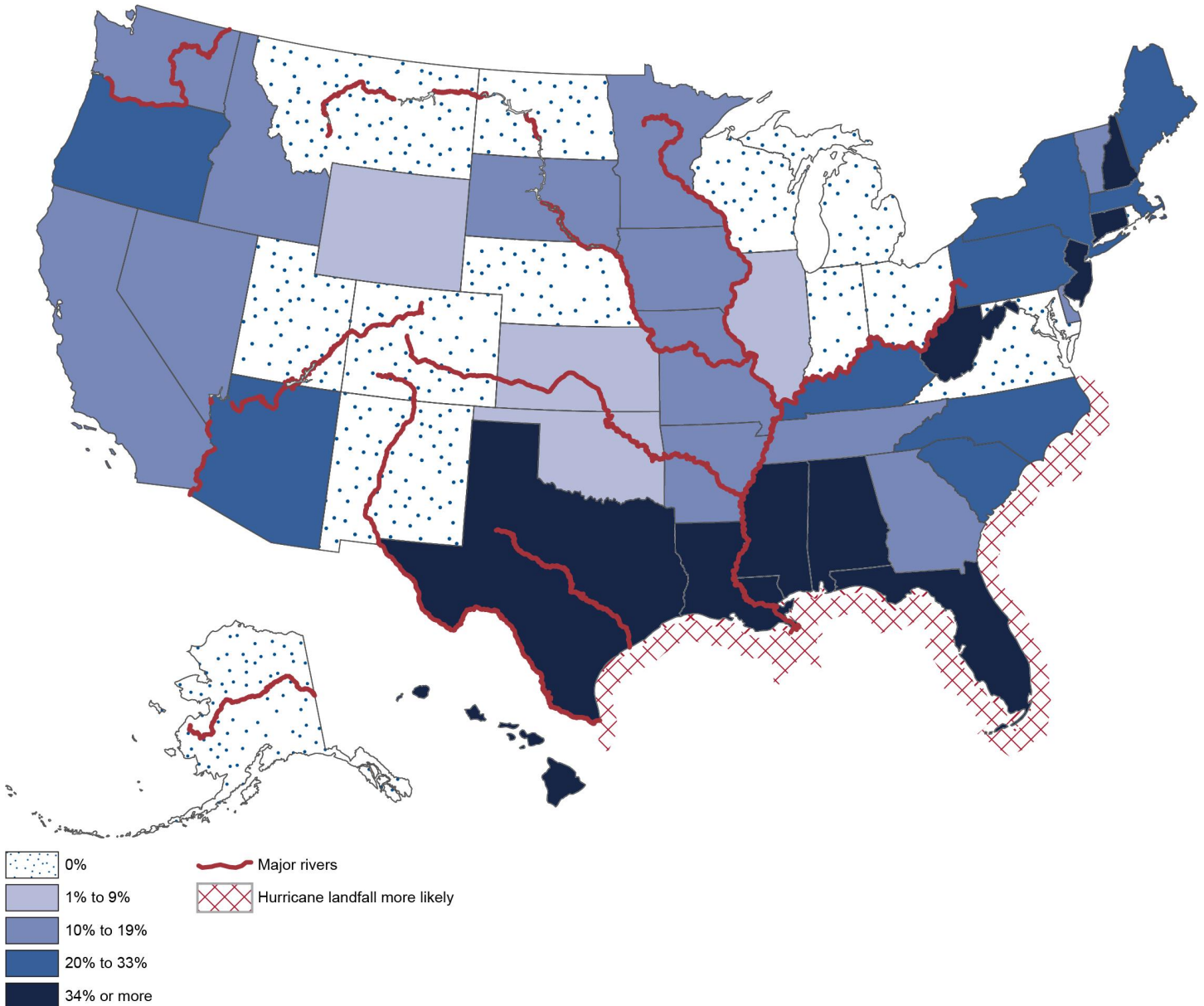
FEMA had been increasing premiums for a number of years prior to implementing Risk Rating 2.0. In implementing previous reforms, FEMA increased premiums by an average of 6 to 11 percent in each year from 2015 to 2021. Under the previous methodology, FEMA was unable to calculate full-risk premiums for many of its policies.⁵⁸ Even if FEMA had not implemented Risk Rating 2.0, it would still have had the authority to increase most premiums by 18 percent annually until it determined it had collected enough to pay for expected losses in the aggregate. However, FEMA would not have known if it was charging a full-risk premium for any individual property. Because Risk Rating 2.0 allows FEMA to calculate full-risk premiums for all policies, FEMA can determine when each policy no longer requires an annual increase to reach full risk. By better aligning premiums with flood risks, Risk Rating 2.0 provides an actuarial justification for these premium increases and helps reduce NFIP's net cost to the federal government—that is, the government's fiscal exposure.

Gulf Coast States Are among Those Most Underpriced and Requiring the Largest Premium Increases

To align premiums with flood risk, premium increases, on average, will be greater in some states than in others. Policies requiring the highest premium increases under Risk Rating 2.0 are also those that were previously the most heavily underpriced. For example, all five Gulf Coast states—Alabama, Florida, Louisiana, Mississippi, and Texas—are in the highest premium increase group (see fig. 4). With high premium increases skewed toward Gulf Coast states where flood risk is higher and most (61 percent) of NFIP's policies are concentrated, Risk Rating 2.0 is correcting a geographical pricing imbalance and addressing a historical source of fiscal exposure.

⁵⁸Under the legacy methodology, FEMA required elevation certificates to determine premiums for full-risk policies. However, it generally did not require elevation certificates for subsidized policies because it did not use elevation information for determining subsidized premiums. Because FEMA lacked elevation for these policies, it was not able to calculate their full-risk rates. See GAO, *Flood Insurance: More Information Needed on Subsidized Properties*, [GAO-13-607](#) (Washington, D.C.: July 3, 2013).

Figure 4: Median Percent Change from Legacy NFIP Premium to Full-Risk Premium under Risk Rating 2.0, by State, as of December 31, 2022



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

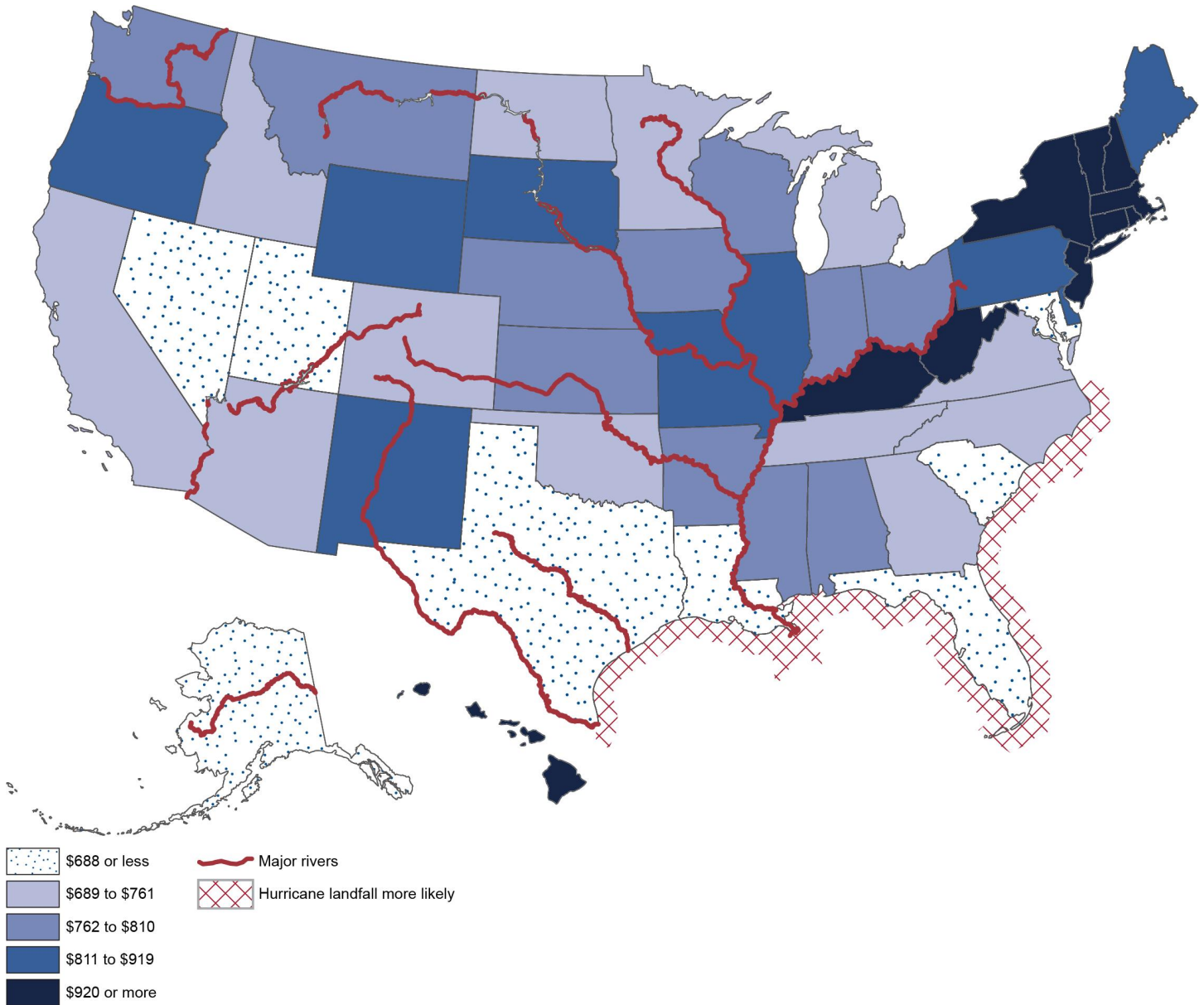
Legend: NFIP = National Flood Insurance Program

The five non-Gulf Coast states experiencing high premium increases—Connecticut, Hawaii, New Hampshire, New Jersey, and West Virginia—account for 5 percent of NFIP policies. For more detailed information on

premiums as of December 31, 2022, and full-risk premiums, percent change, and affordability, see the interactive graphic available at <http://www.gao.gov/products/gao-23-105977>.

Further, many of the states with the lowest premiums as of December 31, 2022, are those with higher flood risk, further indicating historical underpricing and explaining the premium increases under Risk Rating 2.0. As discussed previously, many policies have not yet reached their full-risk premiums under Risk Rating 2.0. For example, nearly every southeastern coastal state is in the group of states with the lowest median premiums as of December 31, 2022 (see fig. 5). However, these are also among the states with the highest risk of hurricane and coastal flooding combined, and they have historically accounted for a majority of NFIP claims.

Figure 5: Median NFIP Premium, by State, as of December 31, 2022



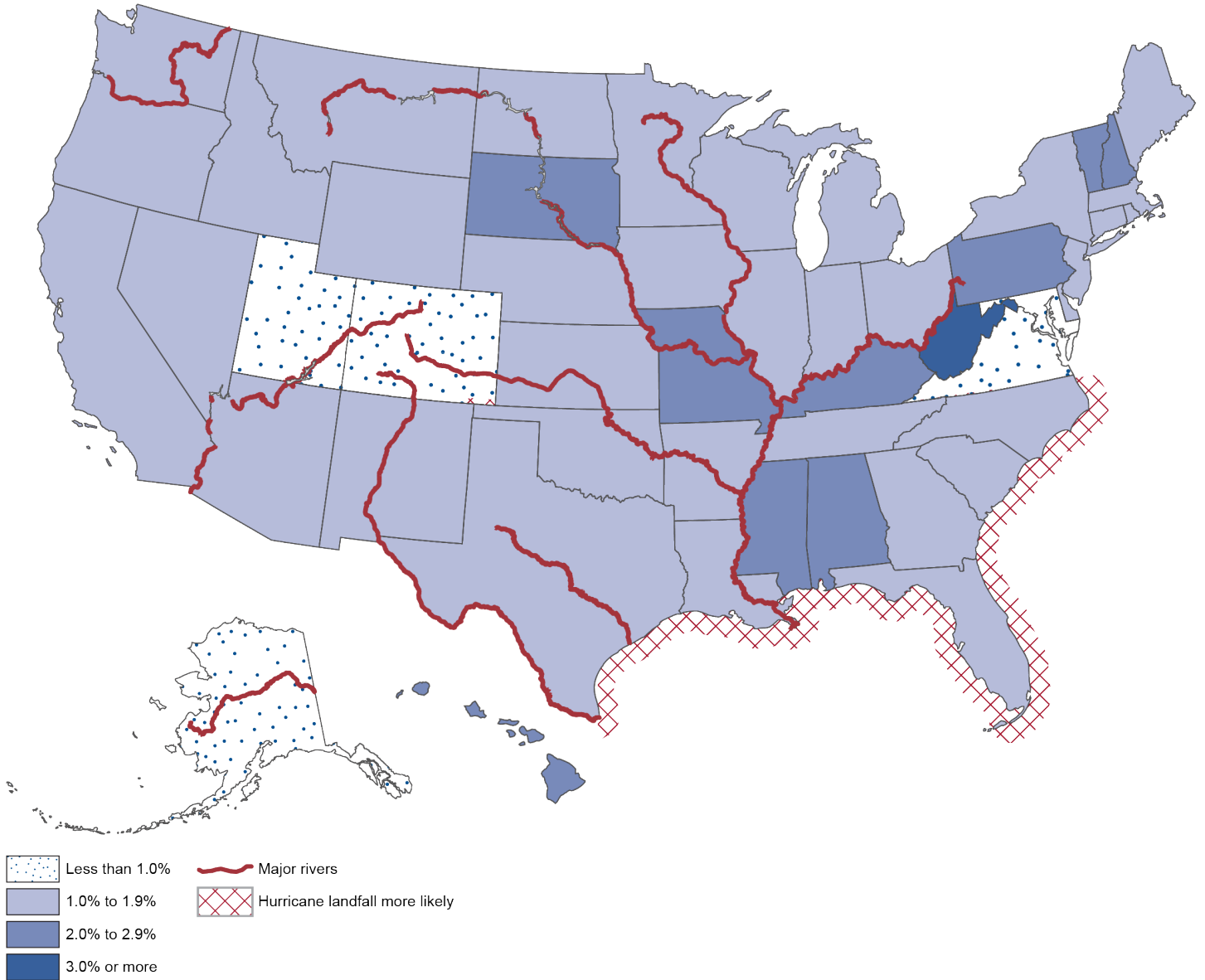
Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977
Legend: NFIP = National Flood Insurance Program

Affordability concerns are growing as NFIP premiums continue to increase over time until reaching full-risk premiums. We estimated the affordability of each NFIP policy by expressing the full-risk premium as a percentage of the median household income of the census tract in which the insured property is located.⁵⁹ We then calculated the median percentage in each state. Under Risk Rating 2.0, the median percentage of household income represented by the full-risk premium will exceed 1 percent in 45 states and will equal or exceed 2 percent in 10 states (see fig. 6). Some proposals for means-based assistance for flood insurance use a certain percentage of household income or area median income as thresholds for determining policyholder eligibility for assistance. Most policyholders in a number of states—particularly along the Gulf of Mexico, throughout Appalachia, and into the Northeast—likely will exceed these thresholds as FEMA continues transitioning to full-risk premiums.

In addition to creating affordability concerns, increasing premiums also have the potential to negatively affect property values and the associated property tax revenues. For example, for properties located in areas where homeowners must purchase flood insurance, an increase in required annual expenses could decrease the purchase price potential buyers could afford. Lower property values could then lead to lower property tax revenues. However, flood insurance is not required on a majority of properties, and not all property owners will be affected similarly by an increase in a single cost component of owning a home. As a result, our analysis focuses on affordability as a whole rather than changes in property value.

⁵⁹To estimate the household income of each policyholder, we used the median household income of the census tract in which the insured property is located, according to the Census Bureau's American Community Survey. We calculated affordability for all primary residential, noncondominium policies for which full-risk rates were available. FEMA research indicates that policyholder incomes are higher than nonpolicyholder incomes, which means that current policies may be more affordable than we report here. Federal Emergency Management Agency, *An Affordability Framework for the National Flood Insurance Program* (Washington, D.C.: Apr. 17, 2018), 11.

Figure 6: Median Full-Risk NFIP Premiums as a Percentage of Household Income, by State, as of December 31, 2022



Source: GAO analysis of Federal Emergency Management Agency and Census Bureau data. | GAO-23-105977

Legend: NFIP = National Flood Insurance Program

Note: This analysis assumes the household income of NFIP policyholders is equal to the median income of the census tract where the insured property is located, according to the Census Bureau's American Community Survey. It includes all primary residential, noncondominium policies for which full-risk premiums were available as of December 31, 2022.

Premium Increases Are Similar by Race and Ethnicity, but Less Affordable for Black Policyholders

Under Risk Rating 2.0, premiums and changes in premiums are relatively similar by race and ethnicity, but affordability varies.⁶⁰ Full-risk premiums generally will increase for all races and ethnicities we analyzed (see table 2).⁶¹

Table 2: Estimated Median National Flood Insurance Program (NFIP) Premiums, by Race and Ethnicity

Racial/ethnic group	Premium as of December 31, 2022	Full-risk premium	Percent difference in medians
All policies	\$688	\$1,282	86%
Black or African American	\$687	\$1,281	86%
White	\$689	\$1,281	86%
Hispanic or Latino	\$664	\$1,288	94%
Asian	\$688	\$1,295	88%

Source: GAO analysis of Federal Emergency Management Agency and Census Bureau data. | GAO-23-105977

Note: This analysis estimates the race and ethnicity of NFIP policyholders using the Bayesian Improved Surname Geocoding method. Full-risk premiums are for policies that have renewed under Risk Rating 2.0 as of December 31, 2022.

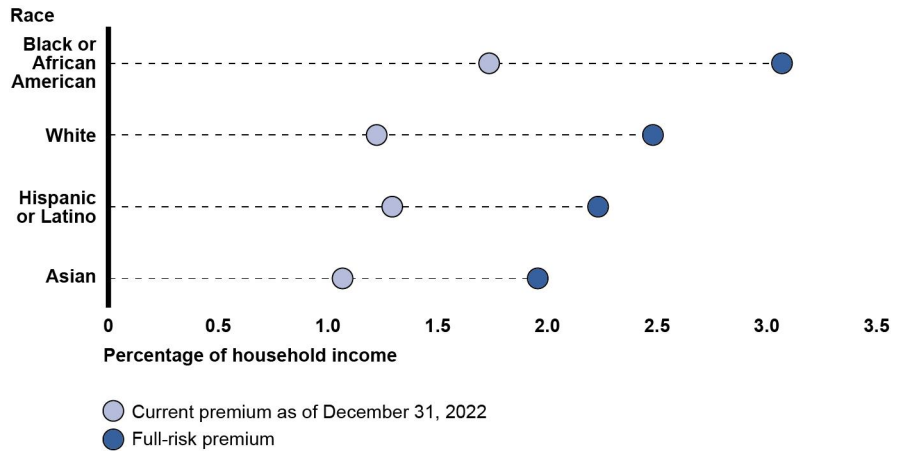
For Black policyholders, however, the premium paid as of December 31, 2022, constitutes a higher percentage of their estimated household income than all other racial and ethnic groups, and their full-risk premiums are expected to do so once fully implemented (see fig. 7). This is because the median household income of Black policyholders is estimated to be lower than that of policyholders of other races and

⁶⁰In this report, we use the term “Black” to refer to “Black or African American” and “Hispanic” to refer to “Hispanic or Latino.”

⁶¹We used the Bayesian Improved Surname Geocoding (BISG) method to predict the race and ethnicity for policyholders of residential, noncondominium NFIP policies, based on their surname and residential location. Several studies have validated BISG estimates against self-reported racial data collected through administrative or survey sources in the health care and financial sectors. BISG makes estimates by calculating the probability that a person with a given surname and residential location will identify with selected racial and ethnic groups based on data from the Census Bureau. For other reports in which we have used this methodology, see GAO, *Tax Equity: Enhanced Evaluation Could Improve Outreach to Small Business Owners*, [GAO-22-104582](#) (Washington, D.C.: Aug. 3, 2022) and *Social Security Administration: Remote Service Delivery Increased during COVID-19, but More Could Be Done to Assist Vulnerable Populations*, [GAO-23-104650](#) (Washington, D.C.: Nov. 17, 2022). For more details on our methodology, see app. I.

ethnicities.⁶² Asian and Hispanic policyholders, on average, will pay slightly lower percentages of their incomes for flood insurance than White and Black policyholders as FEMA transitions to full-risk premiums.

Figure 7: Affordability of National Flood Insurance Program (NFIP) Premiums, by Race and Ethnicity



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Figure 7: Affordability of National Flood Insurance Program (NFIP) Premiums, by Race and Ethnicity

	Percentage of household income	
	Current premium	Full-risk premium
all_races	1.05	2.08
white	1.23	2.48
black	1.73	3.07
hispanic	1.30	2.23
asian	1.06	1.95

Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

Note: This analysis assumes that the household income of NFIP policyholders is equal to the median income of the census tract where the insured property is located, according to the Census Bureau's American Community Survey. It estimates race and ethnicity of policyholders using the Bayesian Improved Surname Geocoding method.

⁶²We estimated the household income of policyholders using the median household income of the policyholder's census tract, according to the 2019 5-year estimate of the Census Bureau's American Community Survey. Using this method, we estimate that Black NFIP policyholders have a median income of \$54,676, compared with \$81,605 for all policyholders.

Means-Based Assistance Could Address Affordability More Transparently and Efficiently Than Discounted Premiums

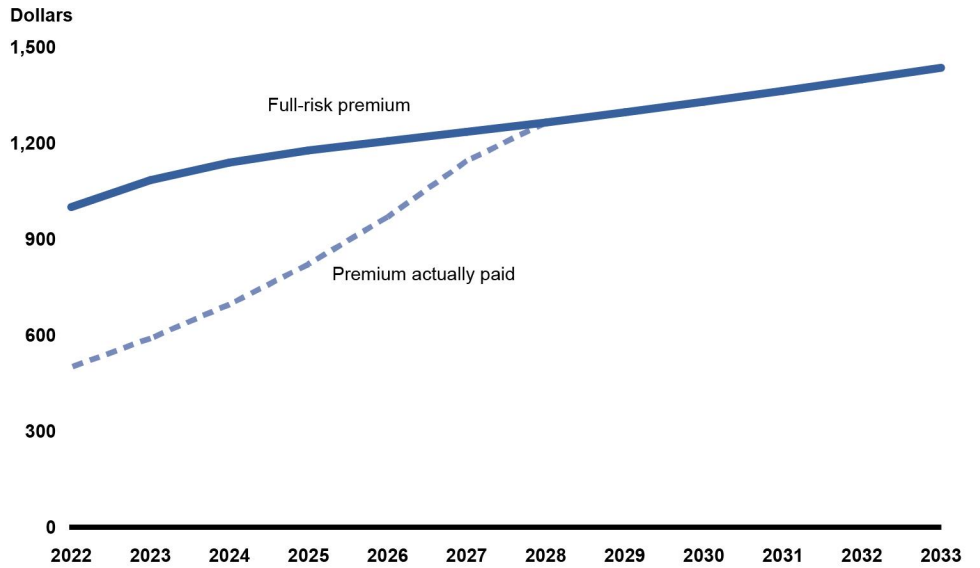
Statutory Caps Address Affordability by Slowing the Transition to Full-Risk Premiums, but Allow Significant Revenue Shortfalls to Continue

To address affordability concerns, Congress has capped annual premium increases on NFIP policies, requiring FEMA to transition from discounted to full-risk premiums gradually.⁶³ We refer to the period of a policy's transition to its full-risk premium as a "glidepath." Because policies on a glidepath pay discounted rather than full-risk premiums, they cause a shortfall in NFIP premium revenue, which is equal to the difference between the full-risk premium and the premium actually paid. For example, a hypothetical NFIP policy currently paying a \$500 premium with an estimated full-risk premium of \$1,000 and subject to an 18 percent annual premium increase cap would have a premium shortfall of \$351 (net of WYO expenses) in the first year and would reach its full-risk premium in 2028 (see fig. 8). This policy would have incurred a total shortfall of \$1,477 in its 6 years on the glidepath.⁶⁴

⁶³42 U.S.C. § 4015(e). Policies are subject to annual rate increase caps ranging from 5 to 25 percent until they reach their full-risk rates. About 85 percent of policies, including those for most primary residences, are subject to an 18 percent cap. The transition will take multiple years for policyholders whose increase necessary to reach full risk exceeds the statutorily allowed 1-year increase. We use "discounted" to refer to premiums that are not yet full risk and therefore result in a premium shortfall. As discussed previously, other statutory discounts exist, such as CRS discounts. FEMA plans to review full-risk premiums annually, and these premiums include many rating factors. As these factors change, the full-risk premium is likely to change to reflect FEMA's most current understanding of flood risk. It also is possible that events may occur that change the models' loss estimates more significantly.

⁶⁴The total premium shortfall is net of WYO expenses. The total premium shortfall before WYO expenses is \$2,121.

Figure 8: Illustration of the Premium Shortfall and Transition to Full-Risk Premium for a Hypothetical National Flood Insurance Program Policy



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Figure 8: Illustration of the Premium Shortfall and Transition to Full-Risk Premium for a Hypothetical National Flood Insurance Program Policy

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Full Risk Premium	1000	1084	1139	1177	1206	1235	1264	1296	1329	1363	1399	1435
Actually paid premium	500	590	696	822	969	1144	1264	1296	1329	1363	1399	1435

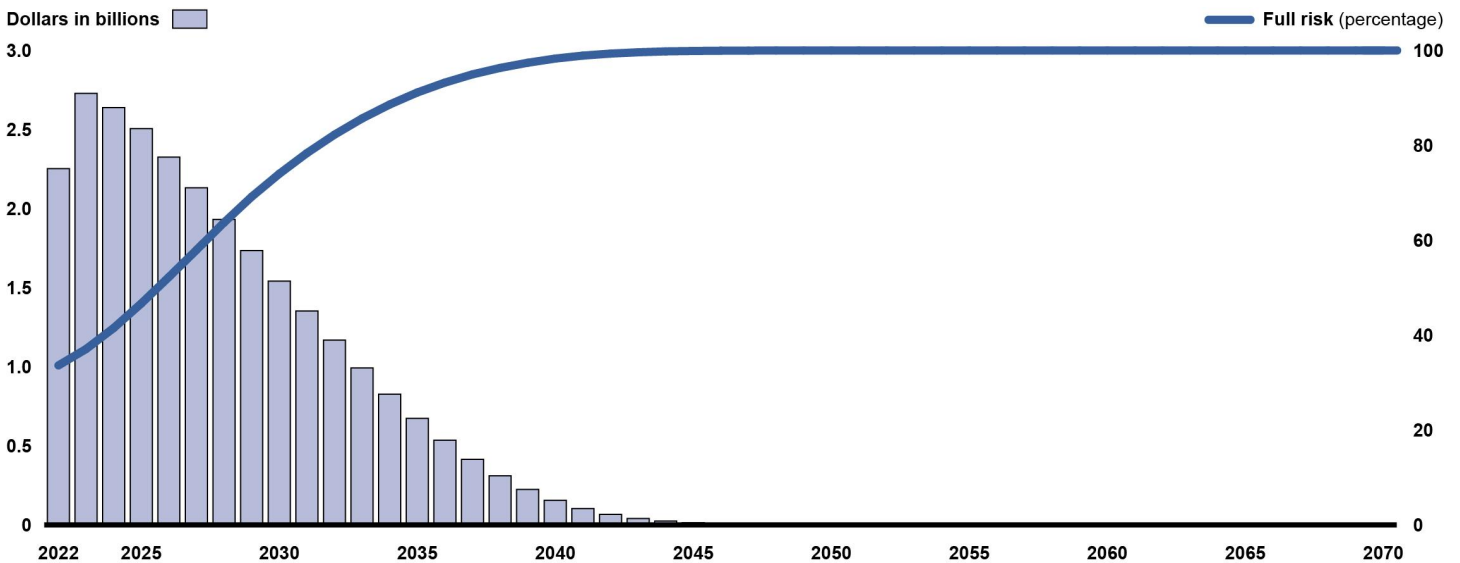
Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

Note: These calculations assume that the premium actually paid increases 18 percent annually and that the full-risk premium increases annually to account for inflation and increases in flood risk.

As of December 31, 2022, 66 percent of NFIP policies that had renewed since April 1, 2022, were on the glidepath. We estimated the following:⁶⁵

- Policies on the glidepath will result in a total premium shortfall of \$2.7 billion in 2023.
- By 2037, 95 percent of policies will reach full-risk premiums.
- By 2049, virtually all policies will reach full-risk premiums.
- The total premium shortfall will be \$26.7 billion (see fig. 9).

Figure 9: Estimated Premium Shortfall and Percentage of National Flood Insurance Program Policies at Full-Risk Premiums, by Calendar Year



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

⁶⁵Our estimates include several assumptions. Our shortfall calculations do not account for assessments, surcharges, and fees. We increased full-risk premiums for inflation and changes in flood risk and increased premiums actually paid by applicable annual premium increase caps. We also assumed that all policies on the glidepath would renew NFIP coverage and that policies would keep the same coverage and deductible amounts until reaching full-risk premiums. Further, we assumed that policies that had not yet renewed under Risk Rating 2.0 would follow a glidepath similar to those of policies that had renewed. By 2049, 99.99 percent of policies would have reached full risk. Finally, we calculated the total premium shortfall net of WYO expenses. In fiscal year 2023, FEMA agreed to pay WYO insurers 29.7 percent of premiums. The present value of the total shortfall is \$23 billion (using a discount rate of 2.82 percent as of December 31, 2022). Full results of our analysis are included in app. II.

Data table for Figure 9: Estimated Premium Shortfall and Percentage of National Flood Insurance Program Policies at Full-Risk Premiums, by Calendar Year

year	net shortfall (left axis)	full risk (right axis)
2022	2252408408	0.336201456
2023	2728563557	0.370681919
2024	2638525198	0.414942247
2025	2505553711	0.466733662
2026	2325532369	0.52244677
2027	2131263869	0.579438186
2028	1931697026	0.637297259
2029	1734731516	0.691645589
2030	1542056608	0.739986581
2031	1352377803	0.783598246
2032	1168442602	0.822461865
2033	992603771.7	0.856611311
2034	826663832.8	0.886065899
2035	673334386.5	0.91136435
2036	535330503.8	0.932232399
2037	414631141.7	0.949596836
2038	311160492.5	0.963181022
2039	224540746.1	0.974078144
2040	155736626	0.982870603
2041	104053612.1	0.989125164
2042	66602679.91	0.993356182
2043	40899688.43	0.996139816
2044	24247384.8	0.998004388
2045	13667618.86	0.99888096
2046	7094309.54	0.999438697
2047	3604660.146	0.999713554
2048	1710083.966	0.999840137
2049	673829.5387	0.999965531
2050	304441.0728	0.999978011
2051	64198.42876	0.999989006
2052	9718.687846	0.999998217
2053	9166.584269	0.999999109
2054	8560.176257	0.999999109
2055	7785.950693	0.999999109
2056	6826.248331	0.999999406

year	net shortfall (left axis)	full risk (right axis)
2057	5684.749463	0.999999406
2058	4276.264346	0.999999406
2059	2551.181833	0.999999406
2060	450.9280152	0.999999406
2061	279.2618074	0.999999703
2062	263.3272639	0.999999703
2063	243.4933374	0.999999703
2064	219.1357301	0.999999703
2065	189.5354718	0.999999703
2066	153.8646916	0.999999703
2067	111.1702556	0.999999703
2068	60.35494917	0.999999703
2069	0.155835746	0.999999703
2070	0	1

Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

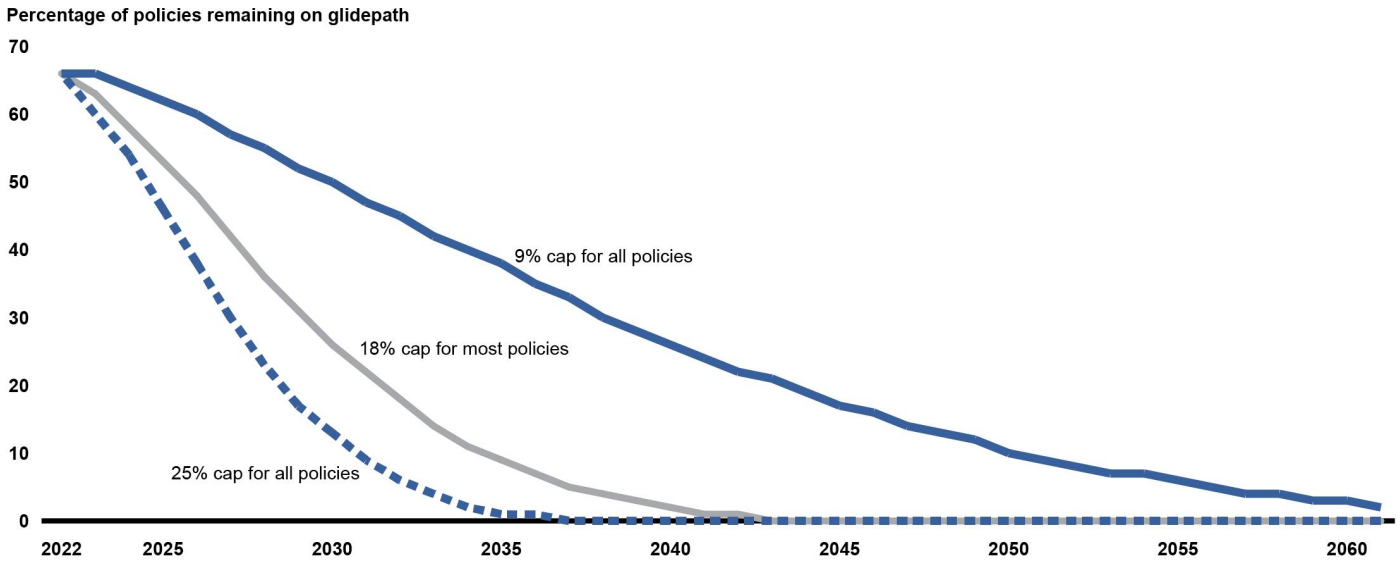
Note: Shortfall calculations start in April 2022 when renewing policies became subject to Risk Rating 2.0. The total estimated glidepath shortfall is \$26.7 billion (present value of \$23 billion as of December 31, 2022).

Our model for estimating the duration and cost of policies on the glidepath included four key inputs—annual premium increase caps, inflation rates, flood risk, and NFIP policy renewal.⁶⁶ Changing each input resulted in different estimates. For example, we found that lowering the annual premium increase cap (currently 18 percent for most policies) to 9 percent for all policies would significantly extend the glidepath (for 95 percent of policies) from 15 to 34 years. It would also increase the total premium shortfall from \$26.7 billion to \$69 billion (see fig. 10). By comparison, increasing the annual premium increase cap to 25 percent for all policies would shorten the glidepath to 11 years and reduce the shortfall to \$18 billion.⁶⁷

⁶⁶In our sensitivity analysis, we incorporated alternative inflation, flood risk, annual rate increase caps, and NFIP renewal rates and changed these assumptions individually while holding the others at the baseline level.

⁶⁷For this sensitivity analysis, we chose a lower premium increase cap of 9 percent to reflect a level that has been specifically proposed in legislation and a higher rate cap of 25 percent to reflect the highest current premium increase cap for certain properties. The present values of the total shortfalls are \$48 billion and \$16 billion, respectively, for the 9 and 25 percent rate cap scenarios.

Figure 10: National Flood Insurance Program Policies Remaining on the Glidepath under Alternative Annual Premium Increase Caps, by Year



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Figure 10: National Flood Insurance Program Policies Remaining on the Glidepath under Alternative Annual Premium Increase Caps, by Year

Year	9 percent	25 percent	baseline
2022	66	66	66
2023	66	60	63
2024	64	54	58
2025	62	46	53
2026	60	38	48
2027	57	30	42
2028	55	23	36
2029	52	17	31
2030	50	13	26
2031	47	9	22
2032	45	6	18
2033	42	4	14
2034	40	2	11
2035	38	1	9
2036	35	1	7
2037	33	0	5
2038	30	0	4

Year	9 percent	25 percent	baseline
2039	28	0	3
2040	26	0	2
2041	24	0	1
2042	22	0	1
2043	21	0	0
2044	19	0	0
2045	17	0	0
2046	16	0	0
2047	14	0	0
2048	13	0	0
2049	12	0	0
2050	10	0	0
2051	9	0	0
2052	8	0	0
2053	7	0	0
2054	7	0	0
2055	6	0	0
2056	5	0	0
2057	4	0	0
2058	4	0	0
2059	3	0	0
2060	3	0	0
2061	2	0	0

Source: GAO analysis of Federal Emergency Management Agency Data. | GAO-23-105977

Note: The baseline scenario (gray line) assumes current annual premium increase caps, which are 18 percent for most policies but range from 5 to 25 percent.

We also found that higher inflation would slightly increase the shortfall amount. For the alternative scenarios, we assumed inflation would be 1 percentage point higher or lower in the first year and converge to the baseline over 5 years. Higher inflation would increase the total shortfall from \$26.7 billion to \$27 billion. By comparison, lower inflation would reduce the shortfall to \$26 billion.⁶⁸

⁶⁸For the baseline inflation estimate, we used projections from the Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (Washington, D.C.: February 2023). The present values of total shortfalls are \$23 billion and \$22 billion under the higher and lower inflation scenarios, respectively.

Changing flood risk has little effect on our model's estimates because the projected increases in flood risk are smaller when annualized and are projected to increase in severity by 2100.⁶⁹ Under both alternative scenarios, the glidepath would remain at 15 years (for 95 percent of policies), and the total shortfall would change by less than \$1 billion.

Premium shortfalls would be reduced if policyholders on the glidepath dropped their insurance. For example, if 6 percent of policies on the glidepath choose not to renew each year, this would reduce the total estimated shortfall from \$26.7 billion to \$19 billion.⁷⁰ However, to the extent that policyholders drop coverage in a way that significantly changes NFIP's distribution of risk among all policies, FEMA would have to change premiums to reflect the new distribution of risk.⁷¹ Further, to the extent that these policyholders do not replace their NFIP coverage with private flood coverage, resilience would decline and fiscal exposure could increase as former policyholders increase their reliance on disaster assistance.

Discounted Premiums Hide Fiscal Exposure, Address Affordability Poorly, and Hinder Private-Market Growth

Current policy addresses affordability through discounted premiums by capping annual premium increases, but this approach has several limitations.

- **Hides fiscal exposure.** The discounted premiums and the resulting premium shortfalls generate fiscal exposure that is not transparent to Congress and the public. Specifically, the premium shortfalls have contributed to the \$36.5 billion in borrowing from Treasury since 2005. While these costs were incurred when the discounted premiums were

⁶⁹For the flood risk estimates, we used projections from the Office of Management and Budget, *Analytical Perspectives: Budget of the United States Government, Fiscal Year 2023* (Washington, D.C.: Mar. 28, 2022). These projections estimated that NFIP's gross average annual losses would increase by 7 to 13 percent by 2050 and 40 to 84 percent by 2100. Using the 2050 projections, we calculated a baseline annual flood risk increase of 0.31 percent, the midpoint between the alternative scenarios of 0.22 and 0.40 percent.

⁷⁰We assumed that nonrenewals would be randomly distributed among the policies on the glidepath. The present value of the total premium shortfall is \$17 billion as of December 31, 2022.

⁷¹The ability to spread risk across a portfolio depends on the diversification of the risks covered by those policies. An insurer can diversify its risks by insuring risks that are more independent of each other—that is, that are less likely to cause losses at the same time.

charged, they were not evident until years later when FEMA had to borrow from Treasury. In other words, the policy decision to address affordability by charging discounted premiums prevented NFIP from building a surplus in lower-loss years that it could have used to pay some of the claims in higher-loss years. As mentioned previously, prior to Risk Rating 2.0, FEMA was unable to reliably calculate NFIP's total annual premium shortfall because it lacked full-risk premium information for many of its policies. However, Risk Rating 2.0 allows FEMA to calculate full-risk premiums for all policies.

- **Addresses affordability poorly.** Discounted premiums are not tied to a policyholder's ability to pay, in terms of both the amount of the discounts and who receives them. As a result, some policyholders who do not need assistance are likely still receiving it (or are receiving more than they need), thus unnecessarily increasing fiscal exposure. Concurrently, some policyholders are likely not receiving enough assistance to make their flood insurance affordable, which may reduce consumer participation if policyholders drop coverage because they cannot afford it. Policyholders subject to the mandatory purchase requirement, however, do not have the option of dropping coverage if premiums become unaffordable. In addition, because full-risk premiums are being implemented through gradual but steady premium increases, the affordability assistance is temporary. As the discounts are phased out, fiscal exposure will decrease, but affordability concerns will increase, potentially further reducing consumer participation and resilience. Moreover, reaching the end of the glidepath does not mean premiums will not increase further. Premiums can increase for a number of reasons, including increased repair costs or higher estimates of the frequency and severity of flooding events.
- **Hinders private-market growth.** Discounts also make NFIP premiums lower than are actuarially justified. Private insurers told us this undercuts the premiums they are able to charge and places them at a competitive disadvantage. This impedes private-market growth and limits insurance options for homeowners. It also increases fiscal exposure to the extent that NFIP continues to cover risk exposure that the private sector could otherwise assume.

We previously identified several policy goals for flood insurance reform.⁷² These include requiring transparency of the federal fiscal exposure, encouraging consumer participation, promoting flood risk resilience, and

⁷²See [GAO-17-425](#).

minimizing federal fiscal exposure (including by encouraging private-sector involvement). However, the current approach to addressing affordability does not achieve these goals because Congress provides assistance by capping annual premium increases rather than through a means-based program that is reflected in the federal budget. Addressing affordability through a means-based assistance program that is recognized in the federal budget, rather than through discounted premiums, could make the premium shortfall costs transparent and could lessen the need for large program borrowing in the future.⁷³ It could also improve Congress's ability to oversee the program and the public's ability to scrutinize it. A means-based assistance program would also be a long-term solution to address affordability that could target assistance more effectively and encourage consumer participation and private sector involvement.

Key Considerations for Means-Based Assistance Include Cost, Consumer Participation, and Effects on the Private Market

A policy decision to design a means-based assistance program would require additional decisions about eligibility, including income-level requirements, the amount of assistance desired for each level of income, and the types of policyholders who would be eligible. Each of these decisions ultimately involves balancing costs with encouraging consumer participation. For example, costs could be limited by providing assistance only to certain categories of current NFIP policyholders. However, providing assistance to future NFIP policyholders could encourage greater consumer participation. Further, providing assistance to private-market policyholders could further encourage consumer participation while treating NFIP and the private market equitably.

We estimated the cost and number of recipients of a means-based assistance program for which only current NFIP policyholders of primary

⁷³We have reported that setting up and administering an assistance program would incur some administrative costs. See GAO, *National Flood Insurance Program: Options for Providing Affordability Assistance*, [GAO-16-190](#) (Washington, D.C.: Feb. 10, 2016).

single-family residences would be eligible.⁷⁴ We assumed a means-based assistance program would replace the glidepath, so any policy receiving assistance would immediately convert to the full-risk premium. We considered two alternatives for determining the assistance amount: (1) covering the amount of the premium that exceeded a certain percentage of household income and (2) covering a certain percentage of the premium.⁷⁵

The first alternative also would restrict eligibility to policyholders whose household income was below a certain percentage of the area median income (AMI). For instance, a policyholder with household income of \$40,000 where the AMI is \$80,000 would be at 50 percent of AMI. This policyholder would be eligible as long as the AMI threshold was set at or above 50 percent. If the policyholder's premium was \$900 and assistance covered the portion of the premium that exceeded 1 percent of household income, the policyholder would be responsible for paying 1 percent of household income (\$400) and the assistance would cover the remaining \$500.

The first alternative would cost the federal government roughly \$585 million to \$2.0 billion in the first year and cover roughly 470,000 to 1.6 million policyholders (see fig. 11).⁷⁶ The estimates vary depending on the level at which the assistance begins (either 1 or 2 percent of household

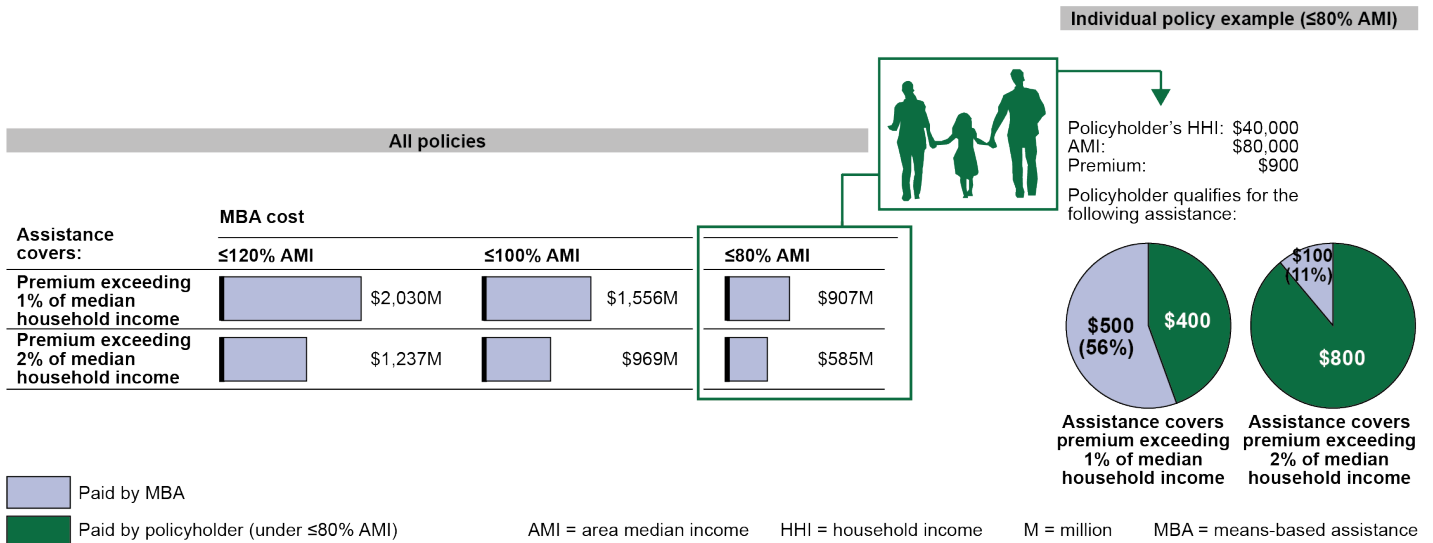
⁷⁴All costs of flood insurance—full-risk premiums as well as any assessments, surcharges, or fees—would be considered in determining eligibility for assistance and how much assistance to offer. As such, we refer to the total policyholder payments as “premiums” in this section. We based our estimates on elements of several recent proposals. Most proposals limit assistance to policyholders with low or moderate household income. Some proposals also feature other eligibility criteria, including accounting for wealth in the means test and further limitations based on federal poverty guidelines. Because we cannot include these criteria, we may overestimate cost. All assessments, surcharges, and fees levied by NFIP on policies are included in the premium amount that is used to determine eligibility for and level of assistance. Full results of our analysis are included in app. II.

⁷⁵The Department of Homeland Security proposed a means-tested assistance program for flood insurance that would offer a graduated premium discount to current and new NFIP policyholders with household income at or below 120 percent of AMI. This proposal is similar to the second alternative we discuss. See Department of Homeland Security, *Legislative Reform Package*.

⁷⁶The cost of a means-based assistance program depends on a number of parameters, including policyholder eligibility and level of support. We discuss our methodology in more detail in app. I.

income) and the policyholders who are determined to be eligible (those with household incomes below either 80, 100, or 120 percent of AMI).⁷⁷

Figure 11: Cost Estimates of a Means-Based Assistance Program—Alternative 1



Source: GAO analysis of data from the Federal Emergency Management Agency, Census Bureau, and Department of Housing and Urban Development; GAO (icon). | GAO-23-105977

Data table for Figure 11: Cost Estimates of a Means-Based Assistance Program—Alternative 1

	V1	V2	V3	V4	V5	V6
PERCENTAGE	1	1	1	2	2	2
AMI	80	100	120	80	100	120
eligible	756159	1236585	1555816	473894	718359	875569
cost	906877515	1556344660	2029594687	585182955	968653618	1237343646
median	766	774	795	801	866	907

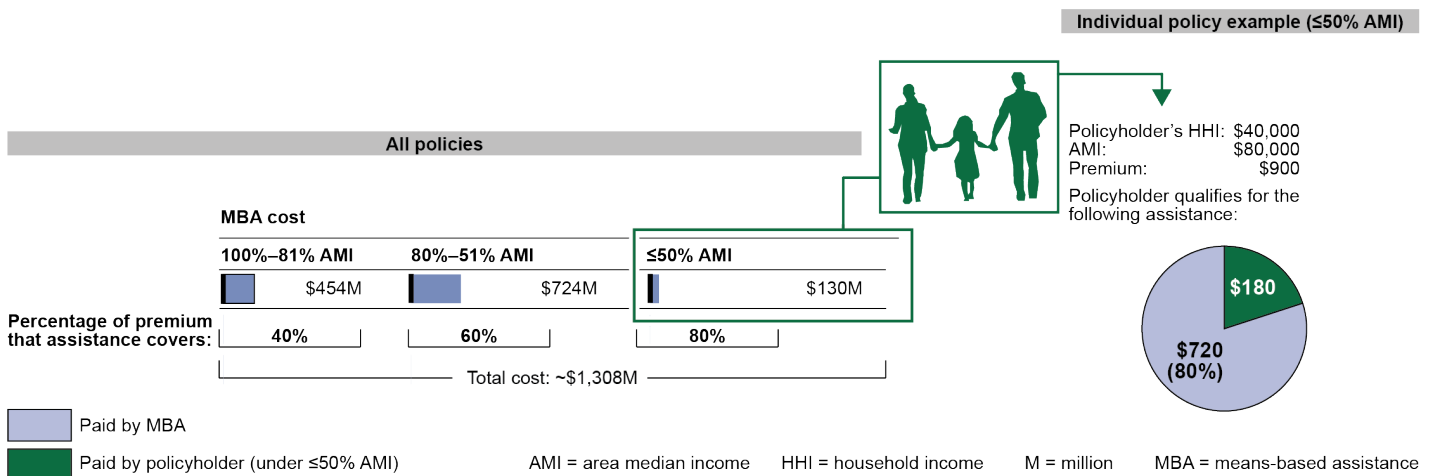
Source: GAO analysis of Federal Emergency Management Agency, Census Beaura, and Department of Housing and Urban Development data; GAO (icon). | GAO-23-105977

The second alternative would provide premium discounts on a sliding scale, whereby the discount would increase as a policyholder's household income decreased relative to AMI. These estimates assume discounts of 40, 60, and 80 percent for AMI thresholds at 100, 80, and 50 percent, respectively. The same policyholder cited above, with a \$900 premium and household income of \$40,000 in a county with an AMI of \$80,000,

⁷⁷We estimated policyholder incomes using the median household income of the census tract in which the insured property is located. As previously mentioned, this may understate policyholder incomes, and therefore overstate the cost of affordability programs.

would receive assistance covering 80 percent of the premium (\$720), leaving the policyholder to pay the remaining \$180 (see fig. 12). This second alternative would cost the federal government roughly \$1.3 billion in the first year and cover roughly 1.5 million policyholders.

Figure 12: Cost Estimates of a Means-Based Assistance Program—Alternative 2



Source: GAO analysis of data from the Federal Emergency Management Agency, Census Bureau, and Department of Housing and Urban Development; GAO (icon). | GAO-23-105977

Data table for Figure 12: Cost Estimates of a Means-Based Assistance Program—Alternative 2

	1	2	3	4
max_ami	50	80	100	Total
eligible	124557	745320	680027	1549904
total_cost	129987535	723694160	453832741	1307514436
median_assistance	918	706	470	

Source: GAO analysis of Federal Emergency Management Agency, Census Beaura, and Department of Housing and Urban Development data; GAO (icon), . | GAO-23-105977

Providing means-based assistance to current NFIP policyholders likely would be more cost-effective than providing assistance through discounted rates because it would be targeted to policyholders who need it. As previously mentioned, we estimated that providing assistance through discounted rates will cost about \$3.9 billion in 2023. In contrast, we estimated that the cost of means-based assistance would be significantly less, ranging from \$585 million to \$2.0 billion in the first year.

Additional modifications to eligibility could help further limit the cost of a means-based assistance program or encourage the participation of more or different consumers. For instance, to decrease costs, FEMA could

restrict eligibility to properties with high flood risk, exclude repetitive loss properties from receiving assistance, or require mitigation to receive assistance. To increase coverage, FEMA could make new NFIP policyholders, private-market policyholders, or both eligible for assistance.

Restricting eligibility based on property flood risk or purchase requirements. Restricting assistance would reduce program costs. For example, assistance could be restricted to policyholders required to purchase insurance (because they generally do not have the option of dropping coverage if they cannot afford it) or to those with properties exceeding a certain threshold of flood risk (because they generally have more need for protection). FEMA does not track which policies are subject to the mandatory purchase requirement, but properties in SFHAs can serve as an upper bound approximation.⁷⁸ We estimated that restricting assistance to policyholders in SFHAs would reduce program costs to between roughly \$380 million and \$1.3 billion for the first alternative, depending on the eligibility thresholds chosen. However, we and others have reported that some of FEMA's floodplain maps designating high-risk areas are outdated.⁷⁹ We have also reported that expanding the mandatory purchase requirement could increase consumer participation and enhance resilience.⁸⁰ As a result, flood risk metrics other than the SFHA boundary line could be useful in determining eligibility.

Excluding repetitive loss properties. According to the Department of Homeland Security, unmitigated repetitive loss properties make up about 2.5 percent of NFIP policies, but such policies have accounted for a disproportionate share of claims. For example, as of December 2021, 48 percent of NFIP claims by dollar value had been paid to properties with

⁷⁸Generally, the mandatory purchase requirement applies to properties in SFHAs with federally backed mortgages (those made, insured, or guaranteed by federally regulated lenders or federal agencies, or purchased by the government-sponsored enterprises for housing—Fannie Mae and Freddie Mac).

⁷⁹See GAO, *FEMA Flood Maps: Better Planning and Analysis Needed to Address Current and Future Flood Hazards*, [GAO-22-104079](#) (Washington, D.C.: Oct. 25, 2021); Elyssa L. Collins et al., "Predicting Flood Damage Probability across the Conterminous United States," *Environmental Research Letters*, vol. 17 (2022); and Natural Resources Defense Council and Association of State Floodplain Managers, Inc., *Petition Requesting That The Federal Emergency Management Agency Amend Its Regulations Implementing the National Flood Insurance Program* (Jan. 5, 2021). As discussed previously, FEMA no longer uses these maps for setting premiums under Risk Rating 2.0. However, FEMA still uses them for determining mandatory purchase requirements and setting local floodplain management standards.

⁸⁰See [GAO-17-425](#).

two or more losses. This high risk of flood loss makes their premiums—and thus their potential assistance cost—high. Excluding these properties from assistance could limit costs and discourage development in high-risk areas.

Incorporating mitigation into affordability assistance. Premiums help to signal flood risk, and with higher premiums, policyholders have a greater incentive to undertake mitigation efforts to reduce their flood risk and premiums. Conversely, premium assistance can reduce incentives for mitigation, so incorporating mitigation into assistance could help preserve and increase resilience while addressing affordability. For example, the program could provide up-front assistance for mitigation measures. This approach would entail larger initial costs, but in the long term it would reduce the risk of loss and the amount of premium assistance needed, as well as the need for federal disaster assistance. Further, several studies have proposed pairing mitigation assistance with premium assistance by requiring mitigation financed through a low-interest loan and providing a means-tested voucher.⁸¹

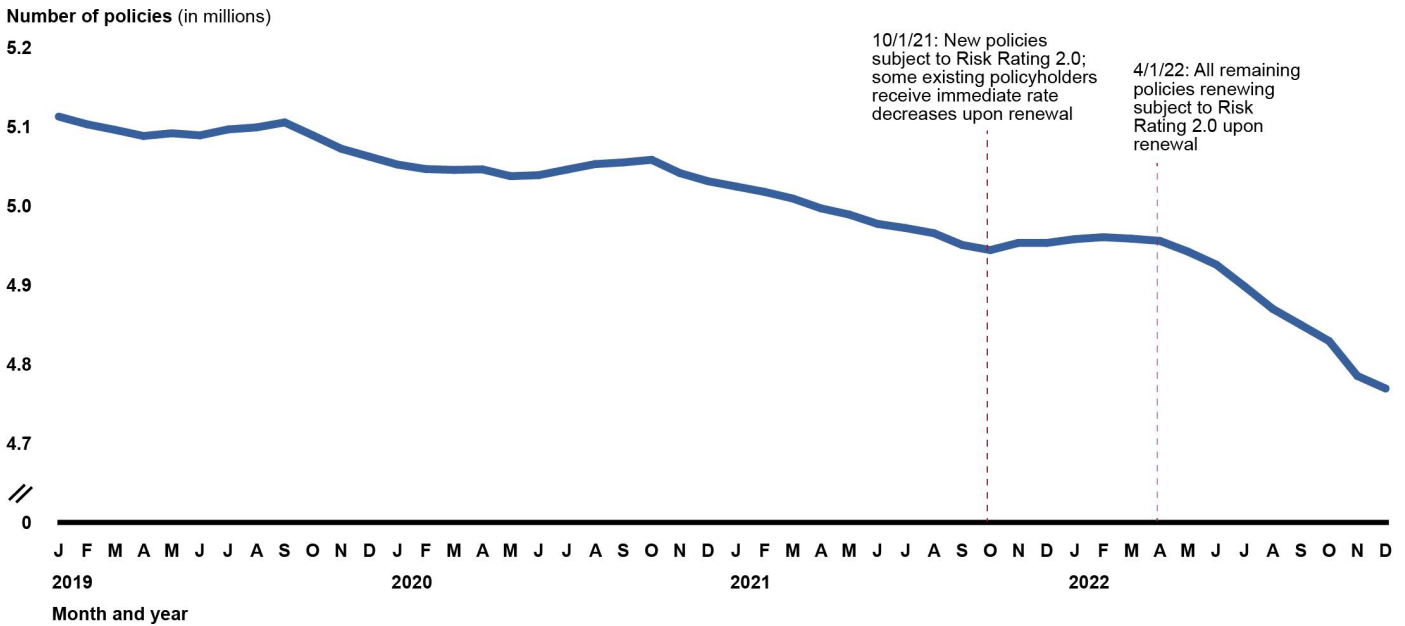
Expanding eligibility to new NFIP policyholders. Making assistance available to property owners who do not yet have NFIP coverage could increase consumer participation and enhance resilience. However, it is difficult to estimate the number of new policyholders that affordability assistance might attract to NFIP, and consequently the level of assistance necessary to meet that demand. Studies have found that NFIP policyholders were price-sensitive to premium changes, indicating that affordability assistance likely would increase NFIP take-up.⁸² The number of NFIP policies has also been steadily decreasing in recent years. At the

⁸¹Carolyn Kousky and Howard Kunreuther, "Addressing Affordability in the National Flood Insurance Program," *Journal of Extreme Events*, vol. 1 (2014); Wendy Zhao, Howard Kunreuther, and Jeffrey Czajkowski, "Affordability of the National Flood Insurance Program: Application to Charleston County, South Carolina," *Natural Hazards Review*, vol. 17, no. 1 (February 2016); and National Research Council of the National Academies, *Affordability of National Flood Insurance Program Premiums—Report 1* (Washington, D.C.: March 2015). The National Academies issued its second report in 2016, which proposed procedures with which FEMA might analyze policy options. See National Academies of Sciences, Engineering, and Medicine, *Affordability of National Flood Insurance Program Premiums—Report 2* (Washington, D.C.: 2016).

⁸²See Larry Baeder and David Evans, *Insights into Consumer Demand for Flood Insurance: Trends in Take-Up* (San Francisco, Calif.: Milliman, September 2021) and Jacob Bradt, Carolyn Kousky and Oliver Wing, "Voluntary Purchases and Adverse Selection in the Market for Flood Insurance," *Journal of Environmental Economics and Management*, vol. 110 (2021).

beginning of 2019, NFIP had 5.11 million policies.⁸³ As of December 2022, NFIP had 4.77 million policies, which includes a reduction of 175,000 policies (3.5 percent) since Risk Rating 2.0 implementation began in October 2021 (see fig. 13). Premiums increased every year during this period, and some former policyholders might want to reenroll if affordability assistance were available.

Figure 13: Number of National Flood Insurance Program Policies, 2019–2022



Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Data table for Figure 13: Number of National Flood Insurance Program Policies, 2019–2022

Year_Month	Policies in millions
01/01/2019	5.11266
02/01/2019	5.10298
03/01/2019	5.09588
04/01/2019	5.08821
05/01/2019	5.09164
06/01/2019	5.08902

⁸³Policy numbers in this section account for each unit within a Residential Condominium Building Association Policy as a separate policy.

Letter

Year_Month	Policies in millins
07/01/2019	5.09653
08/01/2019	5.09904
09/01/2019	5.10536
10/01/2019	5.08898
11/01/2019	5.07216
12/01/2019	5.0621
01/01/2020	5.05205
02/01/2020	5.04641
03/01/2020	5.04538
04/01/2020	5.04607
05/01/2020	5.03746
06/01/2020	5.03872
07/01/2020	5.04579
08/01/2020	5.0527
09/01/2020	5.05482
10/01/2020	5.0581
11/01/2020	5.04134
12/01/2020	5.03105
01/01/2021	5.02433
02/01/2021	5.01758
03/01/2021	5.00921
04/01/2021	4.99679
05/01/2021	4.98894
06/01/2021	4.97719
07/01/2021	4.97187
08/01/2021	4.96542
09/01/2021	4.95052
10/01/2021	4.94409
11/01/2021	4.95321
12/01/2021	4.95314
01/01/2022	4.95796
02/01/2022	4.96036
03/01/2022	4.95849
04/01/2022	4.95572
05/01/2022	4.94211
06/01/2022	4.92575
07/01/2022	4.89831

Year_Month	Policies in millions
08/01/2022	4.86985
09/01/2022	4.84955
10/01/2022	4.82912
11/01/2022	4.78505
12/01/2022	4.76921

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Note: Policy numbers account for each unit within a Residential Condominium Building Association Policy as a separate policy.

Further, we estimated that only about 3.9 percent of occupied housing units had NFIP flood insurance, indicating the potential for significant growth in flood insurance take-up, especially with assistance increasing affordability. To limit demand from new policyholders, expanding eligibility to new NFIP policyholders could be combined with restricting eligibility based on purchase requirements or flood risk. Because most homeowners subject to the mandatory purchase requirement already have an NFIP policy (exceptions include those with a private-market policy or not in compliance), such restrictions could help limit cost increases.⁸⁴

Expanding eligibility to private-market policyholders. Providing assistance for private flood insurance policyholders could allow private flood insurance premiums to compete fairly with NFIP premiums and therefore promote the private market. Specifically, private flood insurers told us that providing assistance only for NFIP policies would put them at a competitive disadvantage because many NFIP customers would pay lower premiums. They said they generally supported an assistance program if private-market policyholders were eligible. They also said that because of privacy concerns, private flood insurers would not want to be responsible for examining policyholders’ tax-related documents and determining eligibility. As with expanding eligibility to new NFIP policyholders, this modification could increase consumer participation and enhance resilience, but it could also be combined with eligibility restrictions to limit demand and costs.⁸⁵

⁸⁴For more information on the mandatory purchase requirement, see GAO, *National Flood Insurance Program: Congress Should Consider Updating the Mandatory Purchase Requirement*, [GAO-21-578](#) (Washington, D.C.: July 30, 2021).

⁸⁵The private residential flood market made up 7 percent of the total residential flood market as of December 2021.

Options Exist to Address NFIP's Legacy Debt and the Potential for Future Debt

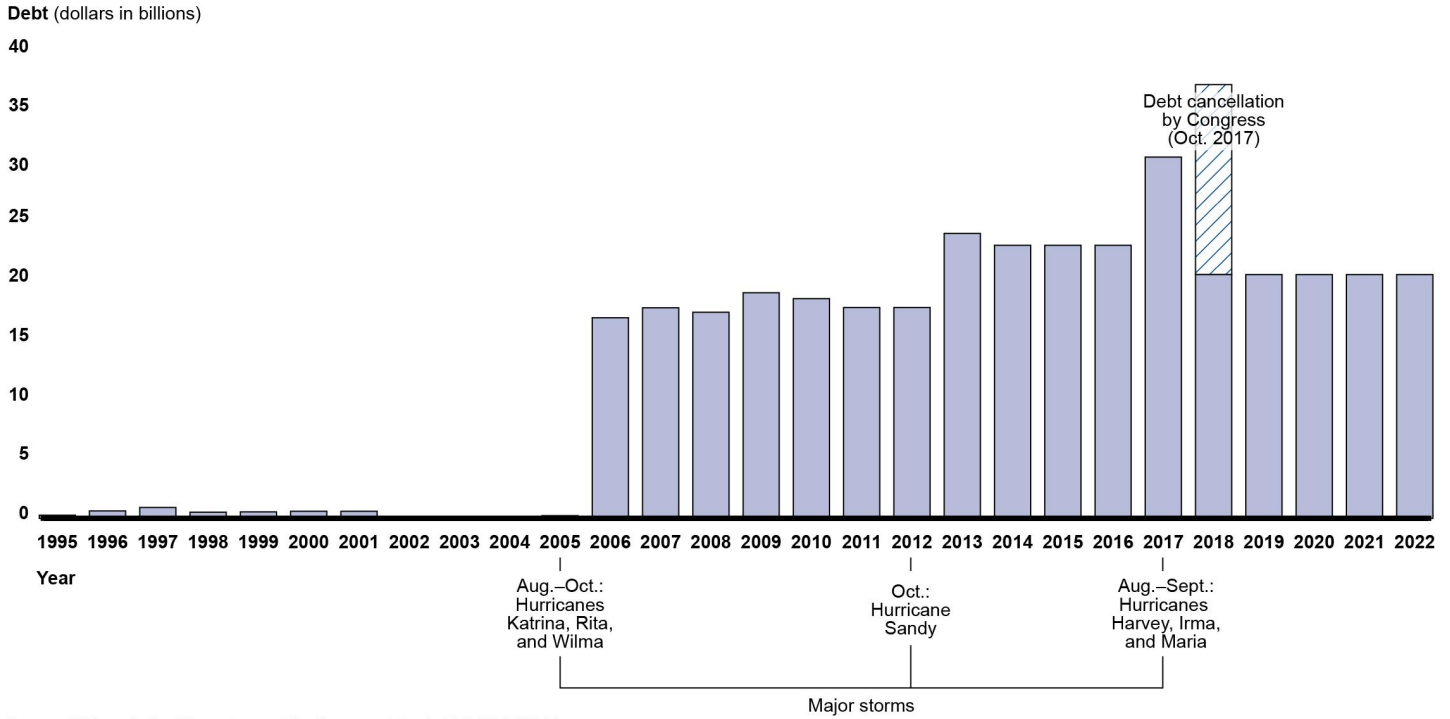
NFIP's Current Debt Delays Actuarial Soundness and Exacerbates Affordability Concerns

NFIP owed \$20.5 billion to Treasury as of April 2023, and not addressing this legacy debt—and the structural issues that caused it—will likely result in increased debt.⁸⁶ It will also delay NFIP's actuarial soundness, worsen policyholder affordability concerns, and reduce consumer participation. FEMA covers NFIP flood claims and program expenses primarily by using insurance premiums, assessments, surcharges, and fees paid by policyholders. When revenue, reinsurance, and any accumulated surplus are insufficient, FEMA has authority to borrow from Treasury. Before 2005, NFIP was mostly self-sustaining, but since then, NFIP has had to borrow \$36.5 billion to pay claims.⁸⁷ NFIP's borrowing has followed catastrophic flood events, most notably Hurricane Katrina in 2005, Hurricane Sandy in 2012, and Hurricane Harvey in 2017 (see fig. 14). Absent congressional action, the program's debt likely will continue to grow as the caps on annual premium increases are slowing the transition to full-risk premiums.

⁸⁶We refer to the debt that has built up to date as the legacy debt, as distinct from additional debt that might accrue in the future.

⁸⁷Congress appropriated funds to retire NFIP's approximately \$200 million debt to Treasury in 1985. NFIP also had intermittent debt in the 1990s, reaching nearly \$1 billion in 1997, but it paid off the debt in subsequent years. Congress forgave \$16 billion of NFIP debt in October 2017.

Figure 14: National Flood Insurance Program Annual Year-End Outstanding Debt to the Department of the Treasury, Fiscal Years 1995–2022



Source: GAO analysis of Department of the Treasury data. | GAO-23-105977

Data table for Figure 14: National Flood Insurance Program Annual Year-End Outstanding Debt to the Department of the Treasury, Fiscal Years 1995–2022

Year	Year-End Debt	Forgiven Debt
1995	0.265	
1996	0.6266	
1997	0.917	
1998	0.522	
1999	0.541	
2000	0.6	
2001	0.6	
2002	0.01	
2003	0	
2004	0	
2005	0.225	
2006	16.885	
2007	17.735	

	Year-End Debt	Forgiven Debt
2008	17.36	
2009	19	
2010	18.5	
2011	17.75	
2012	17.75	
2013	24	
2014	23	
2015	23	
2016	23	
2017	30.425	
2018	20.525	16
2019	20.525	
2020	20.525	
2021	20.525	
2022	20.525	

Source: GAO analysis of Department of the Treasury data. | GAO-23-105977

NFIP’s debt largely is a result of premium inadequacy, due to the policy decision to prioritize affordability over solvency. This is because requiring FEMA to charge discounted premiums that did not reflect the full risk of loss left NFIP with inadequate funds to pay claims in some years. Specifically, FEMA has been statutorily required to offer discounted premiums for certain properties since the program’s inception. While NFIP had relatively little debt for nearly 40 years, the subsidized premiums prevented NFIP from building a surplus that could have helped cover some of the higher-loss years and reduced or avoided some of the borrowing that began in 2005. In other words, while the cost of the subsidized premiums did not become evident until 2005 when it began materializing in debt, the costs began accruing when FEMA charged the discounted premiums. If FEMA had been able to charge full-risk premiums, it might have built up more funds that would have enabled it to pay a greater portion of those larger losses in 2005 and after and given it additional revenue in those years.

NFIP’s debt raises concerns about the actuarial soundness of the program, the program’s affordability for policyholders, and consumer participation.

Actuarial soundness concerns. Although FEMA was prevented from collecting full-risk premiums from previous policyholders, it is statutorily required to repay the debt and any accrued interest using revenue from

current and future policyholders.⁸⁸ From fiscal years 2006 through 2022, FEMA paid an annual average of \$336 million in interest on the debt, but it has not made any repayments of principal since 2014, and Congress forgave \$16 billion of principal in October 2017.⁸⁹ Debt arising from the experience of previous policyholders is not a cost associated with the risk of current policyholders. Therefore, requiring FEMA to repay this debt and the resulting interest expenses obliges FEMA to charge current and future policyholders, which is not actuarially justified.⁹⁰

Affordability concerns. Charging current or future policyholders to service the debt also exacerbates affordability concerns. From fiscal years 2017 through 2022, FEMA made annual interest payments ranging from \$300 million to \$438 million—or the equivalent of \$63 to \$92 per policyholder per year.

Moreover, FEMA has no realistic prospect of repaying the debt as currently structured. FEMA also has reported that repayment of the

⁸⁸42 U.S.C. § 2414(e). NFIP debt normally has a 3-year maturity unless Treasury grants an exception for a longer maturity. Principal and interest payments are permitted at any time, and the debt may be repaid or refinanced at maturity.

⁸⁹FEMA is required to repay the debt, but it can refinance the debt as long as the total debt is less than the borrowing limit. FEMA has not paid principal on the debt since 2014 because it has prioritized building NFIP's reserve fund. FEMA is statutorily required to maintain a reserve fund, with a target balance of at least 1 percent of insurance-in-force (42 U.S.C. § 4017a(b)(1)), and to make a minimum annual payment into the fund of 7.5 percent of the target balance until the fund balance reaches the target amount. According to FEMA, interest payments will continue to consume a significant amount of revenue that would otherwise serve to grow the reserve fund for future catastrophic events, particularly when interest rates rise.

⁹⁰Statutory requirements to repay program debt and build a reserve fund preceded Risk Rating 2.0 and operate outside of the Risk Rating 2.0 ratemaking process. FEMA created full-risk premiums to be prospective and therefore does not include provisions for interest expenses on its debt, nor for repayment of its debt, when calculating them. However, FEMA uses revenue from current policyholders to make these interest payments. Generally, revenue from premiums and the Federal Policy Fee goes into the insurance fund, and revenue from the reserve fund assessment and HFIAA surcharge goes into the reserve fund. FEMA makes interest payments using the insurance fund first, and if necessary, the reserve fund. The requirement to pay interest on legacy debt effectively slows FEMA's ability to achieve the target reserve fund balance, and in turn, requires FEMA to charge current and future policyholders a higher reserve fund assessment, or to charge a reserve fund assessment for a longer period of time, than would otherwise be necessary.

legacy debt is beyond NFIP's current capability.⁹¹ Further, the statutory annual premium increase caps result in premium shortfalls that make additional future debt more likely. For example, repaying the legacy debt—plus future debt we estimated could accrue due to glidepath shortfalls—in 30 years at 2.5 percent interest would require an annual payment of about \$1.9 billion.⁹² NFIP collected \$3.24 billion in premiums in fiscal year 2022. Therefore, this payment would have required a 60 percent surcharge per policyholder in the first year.⁹³

Consumer participation concerns. NFIP policyholder decreases have accompanied premium increases, and such a surcharge likely would cause many more policyholders to drop their NFIP coverage. Some of these policyholders might replace their coverage with a private-market policy—especially those policyholders subject to the mandatory purchase requirement. However, some policyholders would choose to drop coverage altogether, leaving them unprotected from flood risk, reducing resilience, and increasing reliance on federal disaster assistance. Further, having fewer NFIP policyholders to repay the debt would necessitate higher surcharges and likely cause more policyholders to leave NFIP.

Options for Addressing the Legacy Debt Include Canceling the Debt or Modifying Repayment

Addressing the legacy debt would require action by Congress. Two options for doing so are canceling the debt and modifying the repayment terms.

Canceling the debt. One option for addressing the \$20.5 billion legacy debt would involve canceling it (or alternatively, eliminating the

⁹¹According to FEMA, even with the implementation of Risk Rating 2.0, NFIP would be unable to make consistent principal repayments sufficient to improve overall fiscal solvency. FEMA estimated that NFIP could reasonably be expected to accrue an additional \$15 billion of debt in 10 years. See Department of Homeland Security, *Legislative Reform Package*, and *National Flood Insurance Program Semi-Annual Debt Repayment Progress Report, March 31, 2022, Report to Congress and the Secretary of the Treasury* (Washington, D.C.: Aug. 30, 2022).

⁹²We assumed a 2.5 percent interest rate for FEMA debt based on the interest rate for the current FEMA debt, trending slightly higher. We estimated that premium shortfalls would contribute \$24.5 billion in additional debt during this 30-year repayment period.

⁹³The surcharge percentage would need to change in future years as NFIP premium collections and debt levels change.

requirement that FEMA repay it).⁹⁴ This would free current and future policyholders from paying for obligations they were not responsible for incurring and address the existing inequity by allowing current and future policyholders to pay only for their own flood risk. Further, it would make insurance more affordable, thus encouraging consumer participation and resilience. Congress has used this option before when it canceled \$16 billion in NFIP debt in October 2017.⁹⁵

In one sense, canceling the debt transfers costs to taxpayers because current and future policyholders would no longer be paying interest on the debt. However, because it is not likely that current and future policyholders will be able repay the debt under current rules, the cost has essentially already been transferred to taxpayers. This transfer largely occurred each time FEMA sold a policy at statutorily required discounted premiums. Further, the 2017 debt cancellation did not require an appropriation.

Modifying debt repayment. Alternatively, addressing the debt could involve defining a plan to repay the legacy debt and any future debt that is estimated to accrue through an additional surcharge on policyholders. Such a plan could include modified terms of repayment, such as forgiving some or all interest charges. Such a plan also could include immediately charging full-risk premiums to all policyholders—thereby eliminating the premium shortfall and reducing the likelihood of future debt.⁹⁶ However, all of these options would involve substantial costs to future policyholders,

⁹⁴In May 2022, FEMA submitted to Congress a 104-page list of 17 legislative proposals that, among other things, proposed canceling the debt, decreasing NFIP's borrowing authority to two-thirds of expected premiums in force in the following year, implementing a plan to manage the program to a 1-in-20 occurrence loss level (about \$10.5 billion, similar to claims from Hurricane Harvey in 2017), eliminating interest on future debt, and requiring any need for future debt to be funded through emergency supplemental appropriations. See Department of Homeland Security, *Legislative Reform Package*.

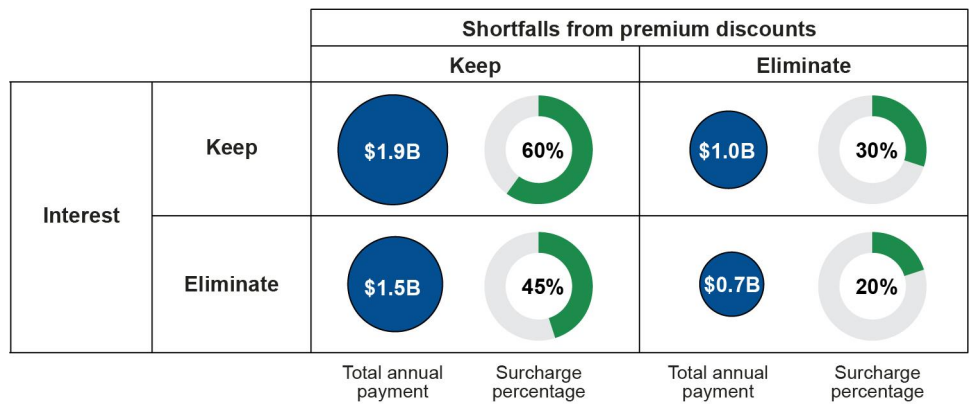
⁹⁵On September 22, 2017, FEMA borrowed \$5.825 billion from the Treasury and reached NFIP's authorized borrowing limit of \$30.425 billion. On October 26, 2017, Congress canceled \$16 billion of NFIP debt to enable FEMA to pay claims for Hurricanes Harvey, Irma, and Maria. On November 9, 2017, FEMA borrowed an additional \$6.1 billion, increasing the debt to \$20.525 billion.

⁹⁶Immediately charging full-risk rates would reduce the annual payment required to repay the debt because doing so would eliminate premium shortfalls, and therefore the likelihood of increases in future debt. As discussed previously, replacing the glidepath with means-based assistance could help address affordability concerns arising from immediately charging full-risk rates.

which would both exacerbate affordability concerns and charge policyholders premiums significantly greater than are actuarially justified.

If interest was eliminated and all policyholders were charged full-risk premiums, repaying the debt in 30 years would require an annual payment of about \$663 million. At NFIP’s fiscal year 2022 premium revenue, the annual payment would require a 20 percent surcharge per policyholder. This \$663 million annual payment is significantly less than repaying the debt with interest while allowing discounted premiums to continue, which would increase the likelihood of future debt requiring repayment and require an annual payment of about \$1.9 billion, or a 60 percent surcharge per policyholder (see fig. 15). Taken independently, immediately charging full-risk premiums to all policyholders would do more to reduce the annual repayment costs (which would come to approximately \$963 million) than would eliminating interest (which would bring costs to approximately \$1.5 billion).

Figure 15: Estimated Effects of Various Requirements for Repaying National Flood Insurance Program (NFIP) Debt over 30 Years



Source: GAO analysis of Federal Emergency Management Agency (FEMA) data. | GAO-23-105977

Data table for Figure 15: Estimated Effects of Various Requirements for Repaying National Flood Insurance Program (NFIP) Debt over 30 Years

			Shortfalls from premium discounts	
			Keep	Eliminate
Interest	Keep	Total annual payment (\$M)	\$1,946	\$963
		Surcharge percentage:	60%	30%
	Eliminate	Total annual payment (\$M)	\$1,455	\$663
		Surcharge percentage:	45%	20%

Source: GAO analysis of Federal Emergency Management Agency (FEMA) data. | GAO-23-105977

Note: Under the scenarios that keep premium shortfalls in place, we assume the debt will increase each year by the amount of the premium shortfall. As a result, FEMA would be paying off both the legacy debt and this estimated future debt. The surcharge percentage is the total annual payment as a percentage of NFIP's \$3.24 billion in premium collections in fiscal year 2022. The surcharge percentage would need to change in future years as NFIP premium collections and debt levels change.

This approach of eliminating interest on the debt and allowing FEMA to charge full-risk premiums to all policyholders would recoup some costs for taxpayers. It would also create a plan to repay the debt, rather than allowing it to continue in perpetuity. However, it would worsen the inequity for current and future policyholders by requiring them to pay for the loss experience of previous policyholders. Further, a 20 percent surcharge could exacerbate affordability concerns and cause some policyholders to drop coverage, thus reducing consumer participation and harming resilience. The surcharge could also increase costs for any future means-based assistance program or reduce the net amount of help individuals receive because the program would have to provide more assistance to make flood insurance costs affordable.

Options for Addressing Future Debt Include Purchasing Additional Reinsurance and Changing Financing of Catastrophic Losses

The rollout of more actuarially sound premiums does not mean that additional borrowing will not be needed in the future. The cap on annual premium increases means that most policyholders will continue to pay discounted premiums for years to come. Congress could eliminate this source of future borrowing risk by removing the cap on annual premium increases so that actuarial, full-risk premiums can be charged, or by appropriating funds to make up for the discounted premiums. Congress could also provide means-based premium assistance in combination with either of these options.

These actions would reduce NFIP's need to borrow in the future, but not eliminate it. The program would still be subject to both "modeling risk" and "sequencing risk." Modeling risk is the inherent risk that even the best up-to-date flood models, using reasonable assumptions and methods, are not guaranteed to be accurate and could underestimate certain aspects of flood risk. Sequencing risk is the risk that even if the models accurately forecast average flood risk over time, there will be both good and bad flood years around that average. If the bad flood years happen first, the program will need to borrow. Sequencing risk is especially acute with catastrophic floods.

Even if NFIP were to collect revenue sufficient to meet long-term expected losses, the magnitude, volatility, and geographic concentration of flood risk means that catastrophic events will happen and might exceed what NFIP can financially manage without relying on additional funding. As a result, it is important to consider options that could help NFIP reduce the likelihood of future borrowing and establish clear expectations for the program's capabilities. Two of these options are purchasing additional reinsurance and changing the financing of catastrophic losses.

Purchasing additional reinsurance. One option for addressing potential future debt is for FEMA to secure more reinsurance coverage for catastrophic losses from the private reinsurance and capital markets.⁹⁷ Doing so would allow FEMA to price some of its flood risk up front through the premiums it pays to reinsurers rather than borrowing from Treasury after a flood, thus reducing the volatility of future catastrophic losses.

A key benefit of reinsurance is to transfer and manage risk rather than to reduce NFIP's long-term fiscal exposure. However, even if FEMA were to collect sufficient revenue to meet long-term estimated losses, FEMA might not be able to fully address its future debt through reinsurance. Specifically, the amount of reinsurance FEMA can purchase depends on the amount of coverage reinsurers are willing to sell, the price they are willing to charge, and the coverage provided. In fact, reinsurance costs have increased in recent years, and FEMA has purchased less coverage. Reinsurance likely will not lower the average cost of NFIP policies because reinsurers charge premiums to compensate for the risk they assume.

In addition, since NFIP must pay fair market premiums for private reinsurance coverage, reinsurance cannot fully address future debt as long as NFIP revenues remain actuarially inadequate. With inadequate NFIP revenue, reinsurance recovers from occasional catastrophic

⁹⁷FEMA has entered into two types of reinsurance agreements with private entities: traditional reinsurance and capital markets reinsurance. Traditional reinsurance agreements reimburse FEMA directly if losses from an event covered by the reinsurance agreement exceed a certain threshold. Since 2017, FEMA has entered into 1-year traditional reinsurance agreements each calendar year. Capital markets reinsurance consists of catastrophe bonds issued to a large number of bondholders who agree to release a portion of their bond principal to FEMA if losses from a covered event exceed the threshold. FEMA's current catastrophe bonds have a 3-year maturity.

events can help delay the accumulation of future debt in the short-term, but cannot fully address it.

Changing financing of catastrophic losses. Another option is to define NFIP's program capacity and require FEMA to manage the program to this capacity before requiring additional funding. This would include establishing an annual risk threshold for the maximum amount of losses that NFIP would be expected to cover based on its premium revenue. For example, FEMA estimated in November 2021 that a risk threshold of a 1-in-20 occurrence flood for NFIP currently is about a \$10.5 billion event, approximately the size of Hurricane Harvey.⁹⁸ Under this option, FEMA would use the risk threshold as one of its ratemaking objectives when developing full-risk premiums.

In the occasional cases when the annual losses exceed the threshold, Treasury could fund claims through the Disaster Relief Fund and, if needed, through an emergency supplemental appropriation.⁹⁹ Financing future shortfalls as needed would avoid recreating debt and the potential for charging future policyholders to repay it, which would improve equity, affordability, consumer participation, and resilience. Further, Treasury would effectively serve as a reinsurer to NFIP, so this option likely would be less costly than FEMA purchasing private-sector reinsurance if Treasury were to choose not to charge FEMA premiums for the cost of the risk transfer. Alternatively, Treasury could choose to charge estimated fair market rates for the risk transfer, but could provide a more reliable source of capital than might be available at certain times in the private markets.¹⁰⁰

⁹⁸See Department of Homeland Security, *Legislative Reform Package*. A "1-in-20 occurrence flood" is a flood event with losses having a 5 percent probability of being equaled or exceeded in any given year.

⁹⁹FEMA's Disaster Relief Fund is the primary source of federal disaster assistance for state and local governments when a disaster is declared. The Disaster Relief Fund is appropriated no-year funding, which allows FEMA to fund, direct, coordinate, and manage response and recovery efforts—including certain efforts by other federal agencies and state and local governments, among others—associated with domestic disasters and emergencies. No-year funding refers to appropriations that remain available for obligation for an indefinite period of time.

¹⁰⁰Treasury likely would need to estimate fair market rates because the private reinsurance market might not always offer coverage at levels sought by NFIP.

Policy decisions regarding how to address legacy debt and potential future debt have implications for current and future policyholders. Debt arising from the loss experience of prior generations of policyholders is not a cost associated with the risk of current and future policyholders, and therefore charging a policyholder to pay it is not actuarially justified. Further, we previously identified policy goals for flood insurance reform, including encouraging consumer participation, promoting flood risk resilience, and minimizing federal fiscal exposure.¹⁰¹ Without statutory changes to address the legacy debt and determine an approach for addressing potential future debt, NFIP's debt likely will continue to grow without any prospect of repaying it. As a result, NFIP's fiscal solvency will be delayed and issues of policyholder equity and affordability will persist. There will also be increased risk to consumer participation in flood insurance and resilience to flood risk.

Risk Rating 2.0 Has Not Yet Significantly Affected the Private Insurance Market, but Some NFIP Rules Hinder Market Growth

Selected private insurers told us that current NFIP premiums generally were lower than what they would need to charge to profitably underwrite flood risk. We have also reported that discounted NFIP premiums undercut private-sector premiums, place private insurers at a competitive disadvantage, impede private-market growth, and ultimately limit insurance options for policyholders.¹⁰² While Risk Rating 2.0 may help to address these concerns by implementing full-risk premiums, it does not yet appear to have significantly affected the private flood insurance market because the transition to full-risk premiums will take many years. The private insurers told us they had not experienced a discernable change in their flood insurance portfolios since Risk Rating 2.0 was

¹⁰¹See [GAO-17-425](#).

¹⁰²See GAO, *Flood Insurance: Potential Barriers Cited to Increased Use of Private Insurance*, [GAO-16-611](#) (Washington, D.C.: July 14, 2016).

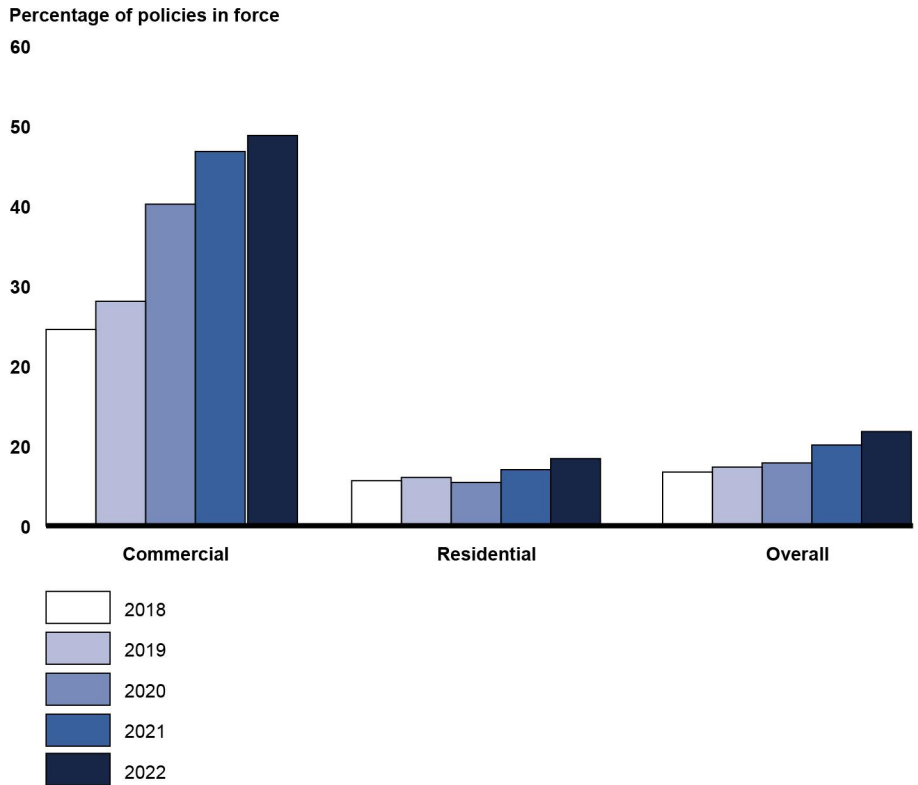
implemented, although some said other factors, such as inflation and the housing market, could also be affecting their growth.¹⁰³

The private flood insurance market has grown, both in absolute terms and relative to NFIP, according to data NAIC began collecting in 2018. From 2018 to 2022, the private market grew from 372,000 policies and \$404 million in direct written premium to 641,000 policies and almost \$1.3 billion in direct written premium.¹⁰⁴ Relative to NFIP, the private market share grew from 7 to 12 percent of policies and from 8 to 22 percent of direct written premium during this period (see fig. 16).

¹⁰³We interviewed six private insurers in September and October 2022, approximately 12 months after FEMA began implementing Risk Rating 2.0 for new policies and 6 months after implementation for renewals. Private insurers said much of their business comes from new home purchases, so a slowing housing market would slow their growth.

¹⁰⁴From 2018 to 2022, the number of NFIP policies decreased by about 356,000 policies. During this same period the private market grew by about 269,000 policies. It is likely that some policyholders that dropped NFIP coverage replaced their flood coverage with a private insurer. Written premium is the contractually determined amount charged on new and renewing policies by the insurer to the policyholder based on the expectation of risk, policy benefits, and expenses associated with the coverage provided by the policy.

Figure 16: Private Flood Insurance Share of Flood Insurance Policies, by Number of Policies



Source: GAO analysis of data from the Federal Emergency Management Agency and the National Association of Insurance Commissioners. | GAO-23-105977

Data table for Figure 16: Private Flood Insurance Share of Flood Insurance Policies, by Number of Policies

		2018	2019	2020	2021	2022
Policies in Force (end of year)	Commercial	0.245391	0.280505	0.401850	0.467760	0.487841
	Residential	0.056356	0.060264	0.054185	0.070068	0.083938
	Total	0.067230	0.073393	0.078495	0.100953	0.117658

Source: GAO analysis of data from the Federal Emergency Management Agency and the National Association of Insurance Commissioners. | GAO-23-105977

Note: Policy counts are as of December 31 of each year and account for each unit within a Residential Condominium Building Association Policy as a separate policy.

Commercial flood insurance accounted for much of this increase, with the private market share growing from 25 to 47 percent of all commercial flood insurance policies. Private insurers told us their commercial policies were particularly competitive because private insurers can offer a commercial policy that covers multiple buildings and locations, while NFIP

requires separate policies for each insured building, which incurs additional expenses. Other industry officials told us that the growth in the private market share of commercial policies might be due to greater awareness of flood risk among risk managers of commercial real estate. Private insurers also told us that a key factor contributing to the growth of the residential private flood insurance market was a 2019 interagency rule from federal financial regulators requiring lenders to accept private insurance for compliance with the mandatory purchase requirement.¹⁰⁵ The private insurers also said they are able to offer higher coverage limits and broader coverage options than NFIP, which has helped them compete.¹⁰⁶

Although the private market has grown in recent years, we have previously reported on several barriers to private-sector involvement in flood insurance.¹⁰⁷ Private insurers told us that two of these barriers, in addition to discounted NFIP premiums, continue to impede private-market growth.

- **Continuous coverage rules.** NFIP policyholders who receive discounted premiums must maintain continuous flood insurance coverage through NFIP to continue receiving the discounts. Specifically, if a former NFIP policyholder who changed flood coverage to a private insurer wants to repurchase NFIP coverage, the policyholder must do so at full-risk premiums rather than rejoining the glidepath. As a result, many NFIP policyholders may be reluctant to consider private flood insurance policies out of concern that they would be unable to return to NFIP at the discounted premium if the private insurer were to significantly increase its premium or decide to stop providing coverage. However, according to FEMA, the agency lacks the legal authority to recognize private flood insurance policies as continuous coverage.

¹⁰⁵Specifically, the Biggert-Waters Act requires federal regulators to direct lenders to accept private-market policies that meet the statutory definition of private flood insurance, and the regulators implemented this requirement, effective in July 2019. *Loans in Areas Having Special Flood Hazards*, 84 Fed. Reg. 4953 (Feb. 20, 2019).

¹⁰⁶NFIP's maximum coverage limit for one-to-four-family residential policies is \$250,000 for buildings and \$100,000 for contents. For nonresidential policies, the maximum coverage limit is \$500,000 per building and \$500,000 for the building owner's contents. Many private flood insurers offer higher coverage limits and broader coverage, such as coverage of basement contents and living expenses.

¹⁰⁷See [GAO-17-425](#); [GAO-16-611](#); and GAO, *Flood Insurance: Strategies for Increasing Private Sector Involvement*, [GAO-14-127](#) (Washington, D.C.: Jan. 22, 2014).

- **Lack of NFIP partial refunds.** NFIP policyholders also are unable to obtain partial refunds if they cancel their policy before the end of their term (typically 1 year) and replace it with a private policy. To avoid losing money, an NFIP policyholder must therefore consider private coverage only near the end of the policy term. However, private insurers told us this window is often too short, so many NFIP policyholders are effectively unable to convert to private coverage. FEMA previously began allowing partial refunds for midterm cancellations in October 2018 but ceased doing so in March 2019 because it determined it lacked legal authority to do so.

FEMA officials said there is a seasonal component to flood risk, meaning that flood losses tend to occur during certain periods each year in some areas. For example, in the Southeast, most flooding occurs during hurricane season in the summer and fall. As a result, if FEMA were to provide refunds for midterm cancellations on a strict pro-rata basis, they would not be actuarially sound. For example, to be actuarially sound, a 1-year policy canceled after 6 months likely would receive more or less than a 50 percent refund, depending on when the cancellation occurred in relation to the timing of the policy term relative to the seasonality of flood risk. If most of the risk occurred in the first 6 months, less than a 50 percent refund would be given.

We previously identified several policy goals for flood insurance reform, including promoting flood risk resilience, minimizing federal fiscal exposure (including by encouraging private-sector involvement), and encouraging consumer participation.¹⁰⁸ However, because FEMA's interpretation of the law finds that FEMA lacks the legal authority to allow private coverage to satisfy the continuous coverage requirement or to allow partial refunds for midterm cancellations, NFIP policy rules discourage NFIP policyholders from seeking private coverage. This slows the growth of the private flood insurance market and limits options for consumers, both of which could result in less consumer participation in flood insurance and therefore less flood resilience, as consumers are not protected from the financial risk of flooding. Discouraging NFIP policyholders from seeking private coverage also results in FEMA maintaining risk and exposure that the private sector could otherwise assume. Finally, to the extent that fewer property owners have flood

¹⁰⁸See [GAO-17-425](#).

insurance, reliance on federal disaster assistance could increase, ultimately increasing federal fiscal exposure.

FEMA Has Released Detailed Information on Risk Rating 2.0, but Has Not Provided It to Policyholders

FEMA Has Developed and Released Substantial Information on Risk Rating 2.0, Largely Targeted to Insurers

FEMA has developed and released substantial information to explain Risk Rating 2.0, relying primarily on WYO insurers to communicate the new methodology to policyholders. Specifically, FEMA developed guidance and training to enable WYO insurers to communicate with policyholders on Risk Rating 2.0. FEMA also developed two websites to describe the new methodology and make information available to NFIP insurers and policyholders. Such information includes overview material, summaries of changes, and detailed technical documents explaining the methodology, data sources, and premium calculation. FEMA also developed documents describing the specific characteristics and variables it uses to calculate premiums under Risk Rating 2.0 and the discounts policyholders could receive by undertaking actions to mitigate their flood risk. FEMA presented this information online in several formats, including video, interactive graphics, fact sheets, technical documents, and a frequently asked questions page.

FEMA also provided data on how premiums would change under Risk Rating 2.0, including the percentage of policies that would experience premium decreases and increases and the magnitude of the premium changes. These data included profiles tailored to individual states, as well as downloadable data at the county and zip code levels. Further, FEMA conducted training sessions and published training materials on its websites to inform insurers and agents who would be selling and servicing policies under Risk Rating 2.0 and interacting with policyholders.

FEMA Has Not Provided Policyholders Complete Information about the New Methodology and Its Implications

FEMA has not provided policyholders with comprehensive information about Risk Rating 2.0 and its implications for mitigation and their individual premiums. Specifically, FEMA provided general policy information to policyholders, but according to FEMA officials, this information included only one minor reference to Risk Rating 2.0 as being a new ratemaking methodology. These mailings included a cover letter with a short introduction to flood insurance, the actual flood insurance policy, and policy declaration pages that summarize coverage and premiums. The policy declaration pages included information such as property characteristics; flood zone; replacement cost value; the full-risk premium; applicable premium discounts; policy assessments, surcharges, and fees; the total annual premium charged; and the history of the property's NFIP flood claims.

However, none of this information explained to policyholders the new methodology or its implications for mitigation and their individual premiums or referred policyholders to FEMA's Risk Rating 2.0 website where rate methodology documents and other resources could be found. Further, FEMA did not notify policyholders about the new ratemaking methodology before implementing it.

Instead, FEMA officials told us they relied on WYO insurers and insurance agents to communicate with policyholders and inform them about Risk Rating 2.0, which they said was consistent with how they communicated with policyholders before Risk Rating 2.0. FEMA officials said they focused on developing guidance and training to support WYO insurers and agents in policyholder communications. However, FEMA did not establish any requirements to ensure that insurers and agents communicated this information to policyholders on FEMA's behalf.

As a result, policyholders may be uncertain about the Risk Rating 2.0 methodology generally and about how it applies to them individually, including the justification for their individual premiums and the potential savings associated with mitigation options. Officials from two associations representing insurance agents told us policyholders have expressed concern over premium increases and generally do not understand Risk Rating 2.0, including how it produces premiums and what factors affect those premiums. Policyholders also had questions about potential

savings associated with available mitigation options, such as elevation or floodproofing. For example, officials from insurance agent associations said policyholders asked agents how mitigating their flood risk could reduce their premium.

Furthermore, agent association officials told us some agents generally felt unequipped to explain Risk Rating 2.0 to policyholders and fully answer their questions. Although FEMA has disclosed details of its ratemaking methodology and the variables it uses on its website, association officials said agents and policyholders cannot use them to calculate the same information they could under FEMA's legacy ratemaking methodology. Under the legacy methodology, agents could consult FEMA's rating manual to determine why premiums may have changed and how mitigation measures might affect premiums. However, Risk Rating 2.0 involves a more sophisticated modeling approach, which uses an automated ratemaking mechanism that did not exist under the legacy methodology.

As a result, Risk Rating 2.0 is more difficult for agents to explain to policyholders than the legacy methodology. The new methodology is complex and incorporates a greater number of flood risk variables. FEMA officials told us that this sophistication was necessary to be consistent with methods used by private insurers and to ensure that premiums reflect an individual property's flood risk. They added that because Risk Rating 2.0 allows agents to obtain an instant quote from an automated quoting system without consulting a detailed manual, insurance agents can obtain a premium and write a policy more easily.

One of FEMA's strategic objectives is empowering risk-informed decision-making.¹⁰⁹ To build long-term resilience, the strategic plan stresses the importance of individuals understanding risk and having resources and capacity to mitigate or reduce it. The strategic plan also notes the importance of accurate information about risk, and of data tools, guidance, and public messaging that ensure highly technical information is explained in easily understood, relatable ways. The plan states this will enable individuals and communities to better understand technical information to inform decision-making.

FEMA has not provided NFIP policyholders with comprehensive information about Risk Rating 2.0, or otherwise made them aware of it.

¹⁰⁹Federal Emergency Management Agency, *2022–2026 FEMA Strategic Plan*.

Therefore, policyholders may not be fully informed about how Risk Rating 2.0 affects them and how they can reduce their premiums through mitigation. Enhancing communication with policyholders to improve their understanding of Risk Rating 2.0 as well as its implications for individual premiums and mitigation possibilities could help policyholders make more informed decisions about their flood risk and the risk-reducing effect of potential mitigation efforts, thus helping advance FEMA's resilience goals.

Conclusions

FEMA's \$36.5 billion in NFIP borrowing from Treasury since 2005 underscores the need for reforming the program. However, finding common ground on reform has been difficult, largely because of the competing goals of making the program solvent while keeping premiums affordable for policyholders. Our April 2017 report outlined a road map for comprehensive reform to help bridge that divide, but much-needed reform has yet to materialize.¹¹⁰

However, through Risk Rating 2.0, FEMA has taken an important step to help move the program toward solvency and actuarial soundness by better aligning premiums with the underlying flood risk of the individual properties it insures. Therefore, full implementation of this improved ratemaking methodology is essential. FEMA could take several steps to improve this effort, but addressing the program's broader solvency and affordability challenges will also require congressional action. Specifically, challenges remain in the following areas:

- **Additional policyholder charges.** Policyholders pay two charges that are not proportional to the risk of the insured property. Until Congress authorizes and requires FEMA to incorporate these charges into the full-risk premium, the total amounts paid by policyholders may not be actuarially justified, and some policyholders could be over- or underpaying.
- **CRS discounts.** CRS discounts are not actuarially justified because they are paid for by policyholders not receiving the discount and are not proportional to the risk reduction they provide. If FEMA were to adjust CRS to incorporate discounts into the full-risk premium based on the actuarial evaluation of risk reduction, it could ensure that full-risk premiums are actuarially sound and that policyholders are paying

¹¹⁰See [GAO-17-425](#).

fair premiums. Further, if FEMA were to evaluate other means for incentivizing desirable community activities that cannot be actuarially justified, it could help ensure that such activities continue if they are no longer incentivized through CRS discounts.

- **Actuarial communication.** Congress does not have key information on Risk Rating 2.0, such as the loss levels that premiums are designed to cover, the associated uncertainty, and estimated revenue and shortfalls for the current and future years, as well as NFIP's fiscal outlook. By annually reporting on these items, FEMA could improve understanding of Risk Rating 2.0 and better enable Congress to oversee NFIP.
- **Affordability.** Addressing affordability through discounted premiums and caps on annual premium increases has several limitations. Specifically, this approach is not cost-effective because the discounts are not targeted based on need. The approach also addresses affordability poorly because some policyholders needing assistance are not receiving it, and it is temporary. In addition, this approach lacks transparency, and it hinders private-market growth by providing artificially low premiums. A means-based assistance program is one way Congress could address affordability more cost-effectively by targeting it based on need. This also would increase the transparency of the costs of affordability assistance by replacing discounted rates and premium shortfalls with full-risk premiums and explicit assistance in the budget. Further, replacing discounted premiums with assistance that also could be used for private policies would promote private-market growth. Finally, by addressing affordability needs more effectively, Congress could encourage more policyholders to maintain coverage, resulting in greater resilience to flood risk and less reliance on disaster assistance.
- **Program debt.** NFIP's debt to Treasury largely is a result of discounted premiums that FEMA has been statutorily required to provide. Charging current policyholders to repay the debt is not actuarially justified, and the associated costs exacerbate affordability concerns. Further, it is unlikely that FEMA will ever be able to repay the debt as currently structured. Attempts to do so likely would lead some policyholders to drop coverage altogether, leaving them unprotected from flood risk, reducing resilience, and increasing reliance on federal disaster assistance. Without actions to address the legacy debt—for example, by canceling it or creating different repayment terms—and the potential for future debt, NFIP's debt likely will continue to grow, actuarial soundness will be delayed, and affordability concerns will increase.

- **NFIP rules affecting private insurers.** NFIP rules related to continuous coverage and cancellation refunds are barriers to private-sector growth. By authorizing and requiring FEMA to allow private coverage to satisfy NFIP's continuous coverage requirement and to offer risk-based partial refunds for midterm cancellations that are replaced by private policies, Congress could encourage policyholders to seek private coverage and thereby help to decrease federal fiscal exposure.
- **Policyholder communication.** Because FEMA has not communicated directly with policyholders about Risk Rating 2.0, policyholders may have questions about the methodology and its implications for their individual premiums and mitigation. By taking additional steps to improve policyholders' awareness and understanding of Risk Rating 2.0 and making available more detailed property-specific information about premiums and potential mitigation savings, FEMA could help policyholders make more informed decisions about their flood risk and promote mitigation and resilience.

For NFIP to achieve long-term solvency and other policy goals, it will be important for FEMA and Congress to take multiple actions to address a number of challenges. In particular, actions are needed to address the current and potential future debt as well as the conditions that caused the debt to accumulate over time. While actions to address the existing debt are essential, without elements such as full-risk premiums that are actuarially sound and an appropriated, means-based assistance program, NFIP's debt problems will likely persist. As NFIP's reauthorization approaches, Congress and FEMA have the opportunity to address the program's long-standing challenges and place it on a path to achieve fiscal solvency while addressing affordability.

Matters for Congressional Consideration

We are recommending the following six matters for congressional consideration:

Congress should consider authorizing and requiring FEMA to incorporate the reserve fund assessment, to the extent necessary based on actuarial principles, into the risk charge within the full-risk premium. (Matter for Consideration 1)

Congress should consider repealing the HFIAA surcharge and authorizing and requiring FEMA to replace forgone revenue with actuarially determined premium adjustments. (Matter for Consideration 2)

Congress should consider providing any affordability assistance for flood insurance through a means-based program that is reflected in the federal budget rather than through statutorily discounted premiums. Options that Congress might consider include allowing assistance to be used for private policies and shortening or ending the period of discounted premiums for those that do not qualify for assistance. (Matter for Consideration 3)

Congress should consider addressing NFIP's legacy and potential future debt and should consider the best means for doing so. Options for addressing the legacy debt include canceling the debt or creating specific repayment terms funded by a transparent premium surcharge. Options for addressing future debt include providing funding to make up for the statutorily-generated premium shortfall, allowing immediate transition to full-risk rates accompanied by a means-based assistance program, changing the financing of catastrophic losses, and enabling FEMA to purchase additional reinsurance. (Matter for Consideration 4)

Congress should consider authorizing and requiring FEMA to allow private flood insurance coverage to satisfy NFIP's continuous coverage requirement. (Matter for Consideration 5)

Congress should consider authorizing and requiring FEMA to offer risk-based partial refunds for midterm cancellations of NFIP policies that are replaced by private flood insurance policies and authorizing and requiring FEMA to implement these refunds in an actuarially sound manner. (Matter for Consideration 6)

Recommendations for Executive Action

We are making the following five recommendations to FEMA:

The Assistant Administrator of FEMA's Federal Insurance Directorate should adjust CRS by calculating a community's rating based only on community activities that reduce flood risk and by incorporating discounts into the full-risk premium based on the actuarial evaluation of risk reduction. (Recommendation 1)

The Assistant Administrator of FEMA's Federal Insurance Directorate should evaluate other means for incentivizing desirable community activities that cannot be actuarially justified but are currently a basis for discounts in CRS. (Recommendation 2)

The Assistant Administrator of FEMA's Federal Insurance Directorate should publish an annual actuarial report that includes the loss levels that full-risk premiums are designed to cover and that current discounted premiums are able to cover, and the associated uncertainty; the estimated premium revenue and shortfall for current and future years; and an evaluation of NFIP's fiscal outlook, including projections of future debt. (Recommendation 3)

The Assistant Administrator of FEMA's Federal Insurance Directorate should take steps to directly inform individual policyholders about Risk Rating 2.0 and make them aware of available information. (Recommendation 4)

The Assistant Administrator of FEMA's Federal Insurance Directorate should take additional steps to make available to policyholders, agents, or both more detailed property-specific flood risk information to help them better understand the justification for individual premiums and potential savings associated with available mitigation options. (Recommendation 5)

Agency Comments

We provided a draft of this report to the Department of Homeland Security for review and comment. In its comments, reproduced in appendix III, the Department of Homeland Security agreed with our recommendations, stating that it has proposed legislation to address some of the concerns noted in our report. This legislation includes a proposal to create a means-tested affordability program to assist low- and moderate-income policyholders. The department also stated that it would continue to enhance communication with policyholders directly and through NFIP insurers. The Department of Homeland Security also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees and the Secretary of Homeland Security. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

Letter

If you or your staff have any questions about this report, please contact Alicia Puente Cackley at (202) 512-8678 or cackleya@gao.gov, or Frank Todisco at (202) 512-2700 or todiscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.



Alicia Puente Cackley
Director, Financial Markets and Community Investment



Frank Todisco
Chief Actuary, Applied Research and Methods

Appendix I: Objectives, Scope, and Methodology

This report examines the Federal Emergency Management Agency's (FEMA) new methodology for setting premiums for the National Flood Insurance Program (NFIP), known as Risk Rating 2.0. Specifically, we examined (1) the actuarial soundness of the new methodology, (2) how premiums are changing for policyholders, (3) efforts to make flood insurance affordable for policyholders, (4) options for addressing program debt, (5) the potential implications of Risk Rating 2.0 for the private flood insurance market, and (6) FEMA's efforts to promote policyholder understanding of Risk Rating 2.0.

To address the first objective, our actuaries reviewed actuarial and other ratemaking documents provided by FEMA.¹ We also reviewed FEMA documents and statutory requirements on premiums, assessments, surcharges, and fees; reinsurance; historical rate reviews; and financial reports for NFIP. We reviewed all FEMA data sources used for developing the full-risk premiums and FEMA's methodology for selecting the data and ensuring data quality and credibility. To examine the actuarial soundness of premiums, we reviewed the actuarial assumptions and methods FEMA used to develop the target losses for the policy year.

We also reviewed FEMA's actuarial analysis on risk classifications, the rationale for actuarial assumptions applied, and the actuarial models used to develop rating factors, including commercial catastrophe models and FEMA models that use data from other government agencies, such as the U.S. Army Corps of Engineers. We reviewed the structure of the full-risk premium and the factors that affect the full-risk premium and the total policyholder payment. We also evaluated the reasonableness of FEMA's findings and conclusions included in its actuarial documents. We interviewed FEMA officials and an actuarial association. Finally, we

¹The actuarial analyses and reviews in this report were performed by Senior Actuary Lijia Guo, Ph.D., ASA, MAAA, and Chief Actuary Frank Todisco, FSA, MAAA. Collectively, the actuaries responsible for this review meet the American Academy of Actuaries' qualification standards with respect to their educational background, designated professional standing, and experience.

compared the methodology and results against actuarial standards and principles.²

In performing this analysis, we relied on actuarial reports and documentation provided by FEMA. We reviewed the documents for reasonableness but did not audit them for accuracy. To the extent that there are material deficiencies in completeness and accuracy in FEMA's actuarial reports, the actuarial premium estimates may be materially different from those shown in the reports had these deficiencies not been present. This review is not a technical review, and we did not verify the accuracy of the calculations performed by the actuaries who developed the full-risk premiums.

To address the second, third, and fourth objectives, we analyzed data from FEMA's PIVOT database on NFIP policies as of December 31, 2022.³ We used these data to determine the premiums that FEMA was charging NFIP policyholders and compared them to the full-risk premiums that FEMA determined policyholders should be paying according to Risk Rating 2.0. We assessed the reliability of these data by interviewing FEMA officials and reviewing documentation on PIVOT. We also tested the data by identifying missing data, outliers, and any obvious errors, and comparing our results to published data. We determined that the data were sufficiently reliable for the purposes of our analyses.

Because FEMA does not collect income information for NFIP policyholders, we estimated policyholder household income using the

²Casualty Actuarial Society, *Statement of Principles Regarding Property and Casualty Ratemaking* (Arlington, Va.: May 7, 2021). The Actuarial Standards Board's relevant Actuarial Standards of Practice include 12 (Risk Classification for All Practice Areas); 23 (Data Quality); 25 (Credibility Procedures); 29 (Expense Provisions in Property/Casualty Insurance Ratemaking); 30 (Treatment of Profit and Contingency Provisions and the Cost of Capital in Property/Casualty Insurance Ratemaking); 36 (Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves); 38 (Catastrophe Modeling); 39 (Treatment of Catastrophe Losses in Property/Casualty Insurance Ratemaking); 41 (Actuarial Communications); 43 (Property/Casualty Unpaid Claim Estimates); 46 (Risk Evaluation in Enterprise Risk Management); 47 (Risk Treatment in Enterprise Risk Management); 53 (Estimating Future Costs for Prospective Property/Casualty Risk Transfer and Risk Retention); and 56 (Modeling).

³For condominiums, NFIP offers a Residential Condominium Building Association Policy, which covers all units within a condominium. As such, it is necessary to adjust for the number of condominium units to determine the number of policies. We account for this when reporting the aggregate number of NFIP policies, but otherwise we treat these condominium policies as single policies. We also excluded from our definition of "commercial policy" a small number of nonresidential policies insuring mobile and manufactured homes.

median household income of the census tract in which the insured property was located, according to data from the Census Bureau's 5-year American Community Survey for 2015–2019.

To further answer the second objective, we used a statistical technique called Bayesian Improved Surname Geocoding (BISG) to estimate the probability that existing NFIP policyholders identified with one of five racial and ethnic groups. These groups were

- Asian, Native Hawaiian, or Pacific Islander, non-Hispanic;
- Black or African American, non-Hispanic;
- Hispanic, any race;
- White, non-Hispanic; and
- all other groups.

Using this method, we combined data from two public release files from the 2010 Census of Population and Housing on racial and ethnic identification. We obtained aggregate data from the 2010 Census Surname File on the probability that a respondent having a given surname reported identifying with one of the groups above. We obtained aggregate data from Summary File 1 on the number of adults in each census block group who identified with each racial and ethnic group. We compared the racial and ethnic groups from each file to data with prior evidence of predictive accuracy, and we applied the BISG method as described in the literature.⁴ We assessed the reliability of these estimates by conducting a literature review on the accuracy of BISG and by examining the completeness and distributions of the estimates for NFIP policyholders. Our prior work describes the BISG method in more detail.⁵

To answer the third objective, we reviewed legislative proposals and policy goals identified in our prior work.⁶ We analyzed NFIP policy data to

⁴Marc N. Elliott et al., "A New Method for Estimating Race/Ethnicity and Associated Disparities Where Administrative Records Lack Self-Reported Race/Ethnicity," *Health Services Research*, vol. 43, no. 5, part I (October 2008): 1730–1732, and Kosuke Imai and Kabir Khanna, "Improving Ecological Inference by Predicting Individual Ethnicity from Voter Registration Records," *Political Analysis*, vol. 24, no. 2 (Spring 2016): 263–272.

⁵GAO, *Tax Equity: Enhanced Evaluation Could Improve Outreach to Small Business Owners*, [GAO-22-104582](#) (Washington, D.C.: Aug. 3, 2022).

⁶GAO, *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, [GAO-17-425](#) (Washington, D.C.: Apr. 27, 2017).

estimate the time it might take for FEMA to transition current policyholders to full-risk premiums and the continued unappropriated federal cost until the transition is completed. Our analysis focused on NFIP policies on the glidepath—those that had not yet reached full-risk premiums by December 31, 2022. Because new NFIP policies must pay full-risk premiums, we assumed that premium shortfalls would come from renewing NFIP policies on the glidepath from 2022 onwards.

To calculate premium shortfalls in calendar year 2022, we used PIVOT data to subtract actual premiums from estimated full-risk premiums for NFIP policies in force under Risk Rating 2.0 from January 1, 2022, to December 31, 2022. Because Risk Rating 2.0 was fully implemented after April 1, 2022, some NFIP policies had not yet renewed under Risk Rating 2.0 from January 1, 2022, to March 31, 2022, and did not renew under Risk Rating 2.0 until between January 1, 2023, and March 31, 2023. For calendar year 2023, we assumed that the average shortfalls and the time it will take these policies to reach full-risk premiums will be the same as the Risk Rating 2.0 policies we observed in 2022.

Our projection of premium shortfall from 2023 onward includes baseline and alternative scenarios on (1) future full-risk premiums, (2) future premiums actually charged (which would be less than full risk while policies are still on the glidepath), and (3) the annual policy renewal rate. In our baseline projection, we assumed that policies on the glidepath would renew with NFIP each year until they reach full-risk premiums.

To project future premium shortfalls, we used inflation projections from the Congressional Budget Office and NFIP gross annual loss projections due to increased flood risks developed by the Office of Management and Budget. For the future full-risk premiums, we assumed they would increase with the projected annual inflation and annualized percent increase in flood risks. For future charged premiums, we assumed that the existing statutory annual premium increase caps would apply until policies on the glidepath reach their full-risk premiums. We analyzed the sensitivity of our estimates to our assumptions on inflation, flood risks, annual reductions in the number of policies due to nonrenewal, and annual premium increase caps by calculating the estimates using alternative assumptions. Our shortfall calculations do not account for assessments, surcharges, and fees. We calculated the total premium shortfall net of WYO expenses. In fiscal year 2023, FEMA agreed to pay WYO insurers 29.7 percent of premiums. We determined the present value of premium shortfalls using a discount rate of 2.82 percent, based on the 10-year average of Treasury spot rates, as of September 30, 2022.

We compared policyholders' estimated household income to the annual area median income of the area in which the property was located, as determined by the Department of Housing and Urban Development. We used these data and the property's full-risk premium from PIVOT to determine policyholders' eligibility for assistance and the amount of assistance they might receive under different potential means-based assistance criteria. We also reviewed studies on flood insurance affordability and legislative proposals for a means-based assistance program for NFIP.

The PIVOT data contained 9 months of policy renewal data under Risk Rating 2.0. We created our estimates of premium shortfall and the cost of means-based assistance by extrapolating values obtained from 9 months of data to 12 months, and assuming that declines in the number of policies observed from April through December 2022 continued for the period January through March 2023. To assess the need for and viability of a means-based assistance program, we compared effects of current affordability strategies to policy goals for flood insurance reform.⁷

To address the fourth objective, we analyzed NFIP policy data, reinsurance documents, and financial statements. We also reviewed our previous work on NFIP, as well as reports from the Congressional Budget Office, Congressional Research Service, FEMA, and others. We assessed the options for addressing program debt against actuarial standards and policy goals we established in prior work.⁸

To address the fifth objective, we assessed the size and makeup of the private flood insurance market using data from the National Association of Insurance Commissioners' (NAIC) data call on the number and total direct written premium of private flood insurance policies. We assessed the reliability of these data by comparing data elements, including private insurer direct written premium and number of policies sold, with totals from other NAIC publications, such as NAIC's annual industry report, and the raw data. We also interviewed NAIC officials about the accuracy and limitations of the data and their process for ensuring reliability of the data. We determined that the data were sufficiently reliable to determine the number and total direct written premium of private flood insurance policies in the United States.

We also interviewed six private flood insurers to obtain their views on how, if at all, the implementation of Risk Rating 2.0 might be affecting their companies and the overall private flood insurance market and any

⁷[GAO-17-425](#).

⁸[GAO-17-425](#).

challenges to private insurer growth. We used the NAIC data to identify larger private flood insurers by direct written premium. We also used these data to identify insurers with a variety of experience writing residential and commercial policies, as well as those that did and did not participate in NFIP's Write Your Own program. Finally, we reviewed laws and regulations that affect private insurers' ability to provide flood insurance and assessed these laws and regulations against policy goals we established in prior work.⁹

To address the sixth objective, we reviewed materials available on FEMA's website related to Risk Rating 2.0, including FEMA's Flood Insurance Manual, rating methodology guide, and discount guide. We analyzed flood insurance policy materials that FEMA sends to policyholders to determine the extent to which FEMA notified policyholders of Risk Rating 2.0 changes. Further, we analyzed training materials FEMA created for agents and Write Your Own insurers to determine what information FEMA provided to these groups to inform them about Risk Rating 2.0 and assist policyholders with their policies. We compared these materials against several criteria, including FEMA's strategic plan and policy goals we established in prior work.¹⁰ In addition, to understand how FEMA communicated premium changes to insurers, agents, and policyholders, we interviewed FEMA officials and two associations representing insurance agents that work with NFIP policyholders.

For all objectives, we reviewed relevant laws and regulations, relevant FEMA documents, our prior reports, and academic publications on flood insurance, and we interviewed FEMA officials. We also attended the National Flood Conference in June 2022, which included discussion of a number of topics related to Risk Rating 2.0 and flood insurance reform.

We conducted this performance audit from March 2022 to July 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁹[GAO-17-425](#).

¹⁰[GAO-17-425](#).

Appendix II: Additional Data on Glidepath and Means-Based Assistance Estimates

We estimated the time it might take for the Federal Emergency Management Agency to transition current policyholders to full-risk premiums and the continued unappropriated federal cost until the transition is completed. Our estimates included four key inputs: annual premium increase caps, inflation rates, flood risk, and National Flood Insurance Program (NFIP) policy renewal. Changing each input resulted in different estimates (see table 3).

Table 3: Glidepath Time and Premium Shortfall Estimates

	Scenario	Year when 95 percent of policies reach full risk	Total shortfall (in billions)	Present value of total shortfall (in billions, 2022)
	Baseline	2037	\$26.7	\$22.9
Alternate assumptions: statutory caps on annual premium increases	Increase all premium increase caps to 25 percent	2033	17.5	15.8
	Decrease 18 percent premium increase caps to 9 percent	2055	67.2	46.4
	Decrease all premium increase caps to 9 percent	2056	69.3	48.3
Alternate assumptions: inflation	Higher inflation	2037	27.2	23.3
	Lower inflation	2037	25.0	21.5
Alternate assumptions: flood risk	Higher flood risk	2037	26.4	22.6
	Lower flood risk	2037	25.8	22.1
Alternate assumptions: policy nonrenewal	3 percent nonrenewal	2036	22.1	19.2
	6 percent nonrenewal	2034	19.2	16.9

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Note: The baseline scenario assumes that all policies on the glidepath would renew National Flood Insurance Program coverage and that flood risk would increase by 0.31 percent annually. The alternate inflation scenarios assume that inflation would be 1 percentage point higher or lower in the first year and converge to the baseline over 5 years. The higher and lower flood risk scenarios change the annual increases in flood risk to 0.40 percent and 0.22 percent, respectively. The present value amounts were determined using a discount rate of 2.82 percent.

We estimated the cost and number of recipients of a means-based assistance program for which only current NFIP policyholders of primary single-family residences would be eligible (see table 4). We also

Appendix II: Additional Data on Glidepath and Means-Based Assistance Estimates

estimated how these numbers would change by limiting eligibility to policyholders with properties in special flood hazard areas. We used two alternatives for determining the assistance amount. The first alternative would cover the amount of the premium that exceeded a certain percentage of household income (1 or 2 percent) and restrict eligibility to policyholders whose household income was below a certain percentage of the area median income (80, 100, or 120 percent). The second alternative would provide premium discounts on a sliding scale, whereby the discount would increase (from 40 to 80 percent) as a policyholder's household income decreased relative to area median income (from 100 to 50 percent).

Table 4: Estimated Participants and Costs of Alternative Means-Based Assistance Programs

		Alternative 1			Alternative 2			
AMI eligibility threshold		≤ 80%	≤ 100%	≤ 120%	≤ 80%	≤ 100%	≤ 120%	≤ 100%
Percentage of household income at which assistance begins		1%	1%	1%	2%	2%	2%	n/a
All policies	Eligible policyholders	756,159	1,236,585	1,555,816	473,894	718,359	875,569	1,549,904
	Total cost of federal assistance (first year, dollars in millions)	\$907	\$1,556	\$2,030	\$585	\$969	\$1,237	\$1,308
Policies in special flood hazard areas only	Eligible policyholders	378,710	632,449	795,342	259,556	410,009	508,641	721,209
	Total cost of federal assistance (first year, dollars in millions)	\$559	\$977	\$1,287	\$383	\$646	\$840	\$752

Legend: AMI = area median income; n/a = not applicable

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-23-105977

Note: This analysis assumes that a means-based assistance program would replace the glidepath, so any policy receiving assistance would immediately convert to the full-risk premium. The assistance would cover all costs of flood insurance, which include premiums as well as any assessments, surcharges, or fees.

Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 205284



June 30, 2023

Alicia Puente Cackley
Director, Financial Markets and Community Investments
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Frank Todisco
Chief Actuary, Applied Research and Methods
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management Response to Draft Report GAO-23-105977, "FLOOD INSURANCE:
FEMA's New Rate-setting Methodology Improves Actuarial Soundness but
Highlights Need for Broader Program Reform"

Dear Ms. Puente Cackley and Mr. Todisco:

Thank you for the opportunity to comment on this draft report. The U.S. Department of Homeland Security (DHS or the Department) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

DHS leadership is pleased to note GAO's recognition of the Federal Emergency Management Agency (FEMA) implementing the National Flood Insurance Program's (NFIP) Risk Rating 2.0 beginning in October 2021. As of April 1, 2023, FEMA has fully implemented Risk Rating 2.0, which leverages industry best practices, cutting-edge technology, and better data to enable FEMA to deliver rates that are actuarially sound, equitable, easier to understand, and better reflect a property's flood risk. GAO also acknowledged in the 2023 High-Risk report¹ that, with the implementation of Risk Rating 2.0, the NFIP moved from "partially met" to "met" in three of five categories on

¹GAO, "High Risk: Efforts Made to Achieve Progress Need to Be Maintained and Expanded to Fully Address All Areas," dated April 20, 2023 (<https://www.gao.gov/products/gao-23-106203>).

**Appendix III: Comments from the Department
of Homeland Security**

its annual list of programs and operations that are vulnerable to waste, fraud, abuse, or mismanagement, or in need of transformation.

While GAO's draft report focused on options to address FEMA's NFIP debt, it is also important to note that FEMA is required to estimate flood insurance rates "based on consideration of the risk involved and accepted actuarial principles."² This premium is a prospective, actuarial measure of risk designed to cover expected future losses, not to recoup past unfavorable results or pay for earlier debt. FEMA does not factor into its premium an expense for debt or interest on the debt.³

The Department remains committed to achieving an equitable NFIP and has proposed legislation to, *inter alia*, (1) make flood insurance more affordable to low- and moderate-income policyholders through a means-tested assistance program, and (2) establish a framework to achieve solvency of NFIP. Additionally, FEMA remains committed to transparent and effective policyholder communication. While the NFIP has historically communicated with policyholders through the NFIP insurers, FEMA will continue to enhance communication both through the NFIP insurers and also more directly with the policyholders.

The draft report contained five recommendations with which the Department concurs. Enclosed find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy, contextual, and other issues under a separate cover for GAO's consideration.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H CRUMPACKER  Digitally signed by JIM H
CRUMPACKER
Date: 2023.06.30 12:18:51 -04'00'

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Enclosure

² 42 United States Code (USC) 4014 "Estimates of premium rates,"
(<https://www.govinfo.gov/app/details/USCODE-2021-title42/USCODE-2021-title42-chap50-subchapI-sec4014>)

³ FEMA collects certain surcharges, such as the Homeowner Flood Insurance Affordability Act surcharge, and performs the Reserve Fund assessment which was implemented to better capitalize the NFIP before the introduction of the current rating system.

Enclosure: Management Response to Recommendations Contained in GAO-23-105977

GAO recommended that the Deputy Associate Administrator of FEMA’s Federal Insurance and Mitigation Administration:

Recommendation 1: Adjust CRS [Community Rating System] by calculating a community’s rating based only on community activities that reduce flood risk and by incorporating discounts into the full-risk premium based on the actuarial evaluation of risk reduction.

Response: Concur. FEMA Resilience (RSL) Mitigation Directorate (MD) Floodplain Management Division (FPMD) agrees that CRS rating should be based on community activities that reduce flood risk. Accordingly, FEMA’s MD FPMD is undertaking a multi-year effort to redesign the CRS program to better align with its improved understanding of flood risk and flood risk reduction approaches. On February 1, 2023, FEMA RSL MD FPMD established a CRS redesign workgroup that includes representation from NFIP insurance, mitigation, and floodplain management to lead this effort and evaluate how the CRS program can better incentivize community-level action to reduce the loss of life and property due to flood risk. Additionally, FEMA RSL MD FPMD is exploring potential paths forward for the CRS program that will increase the nation’s resilience to future flooding, support the sound financial framework of the NFIP, and result in a more customer-centric CRS program. These efforts will include the following actions:

Actions	Estimated Completion Date (ECD)
Implement incremental program and process improvements for CRS	January 31, 2024
Develop alternative program designs and initiate public input collection	September 30, 2024
Finalize program design	September 30, 2025
Develop strategy for implementing new program design	March 31, 2026
Begin managing change and transition to new program design, including advance notice for NFIP program participants	June 30, 2026
Begin implementation of new program design for CRS	December 31, 2027

Overall ECD: December 31, 2027.

Appendix III: Comments from the Department of Homeland Security

Recommendation 2: Evaluate other means for incentivizing desirable community activities that cannot be actuarially justified but are currently a basis for discounts in CRS.

Response: Concur. FEMA RSL MD FPMD will evaluate other means for incentivizing community activities in the CRS program redesign previously described in this letter, and will also take the following actions:

Actions	ECD
Implement incremental program and process improvements for CRS	January 31, 2024
Initiate public input collection on incentivizing non-discount community activities	September 30, 2024
Finalize report on public input	March 31, 2025
Complete CRS Communities Incentives report	August 29, 2025

Overall ECD: August 29, 2025.

Recommendation 3: Conduct and publish an annual actuarial report that includes the loss levels that full-risk premiums are designed to cover and that current discounted premiums are able to cover, and the associated uncertainty; the estimated premium revenue and shortfall for current and future years; and an evaluation of NFIP’s fiscal outlook, including projections of future debt.

Response: Concur. By no later than the end of fiscal year 2025, FEMA Resilience Federal Insurance Directorate (FID) will publish its first annual actuarial report for the current rating plan, to include the items discussed in this draft report. As part of this, FEMA FID will develop the necessary analysis, draft effective accompanying communication, and ensure the actuarial report is consistent with statutory reporting requirements and Actuarial Standards of Practice,⁴ as appropriate.

These efforts will include the following actions:

Actions	ECD
Develop analysis, draft communication, and ensure consistency with statutory reporting requirements and Actuarial Standards of Practice.	September 30, 2024
Finalize Draft Report and Begin Clearance Process	March 31, 2025
Publish Final Report	September 30, 2025

⁴ Actuarial Standards of Practice, Actuarial Standards Board, <http://www.actuarialstandardsboard.org/standards-of-practice/>

It is also important to note that FEMA FID currently compiles multiple recurring reports related to the NFIP financial position, including:

- National Flood Insurance Program (NFIP) Fiscal Year Report to Congress: Biggert-Waters Flood Insurance Reform Act of 2012;
- National Flood Insurance Program Semi-Annual Debt Repayment Progress Report - Report to Congress and the Secretary of the Treasury;
- Quarterly Reserve Fund Report; and
- Quarterly Watermark - National Flood Insurance Program Financial Statement

These reports enable FEMA to satisfy existing statutory reporting requirements. However, comprehensive, stream-lined reports would more clearly communicate elements of the NFIP's financial position to Congress and the public. Accordingly, on April 21, 2023, DHS submitted to the 118th Congress 17 legislative proposals to reform FEMA's NFIP which will reduce reporting complexity. These legislative proposals include legislative reforms that would reduce the reporting complexity for the NFIP so that, in a two-year period, reports due to the Congress would be reduced from 15 to 4, while providing similar and more timely information.

Overall ECD: September 30, 2025.

Recommendation 4: Take steps to directly inform individual policyholders about Risk Rating 2.0 and make them aware of available information.

Response: Concur. Regardless of the rating methodology, FEMA agrees that individual policyholders should be informed about their flood risk and be able to obtain information about their flood insurance premium. FEMA FID will enhance policyholder communications, by reviewing the policyholder communication products and the public-facing websites to provide policyholders with more information about flood insurance.

With the implementation of Risk Rating 2.0, FEMA RSL FID Policyholder Services and Product Delivery Divisions updated policyholder communication products such as the policy declaration page, renewal notices, and annual Flood Insurance Reform Act notices that provide information about flood risk directly to policyholders. The updated declaration page provides information about the insured structure as well as itemized dollar amounts on the premiums, discounts, surcharges, and fees paid. The declaration page also refers policyholders to both a website and to their NFIP insurer to obtain more information about their flood risk. In addition, FEMA FID provides NFIP insurers with information for each quote provided to enable NFIP insurers and insurance agents to discuss flood risk with policyholders.

ECD: April 30, 2024.

Appendix III: Comments from the Department of Homeland Security

Recommendation 5: Take steps to make available to policyholders, agents, or both more detailed property-specific flood risk information to help them better understand the justification for individual premiums and potential savings associated with available mitigation options.

Response: Concur. To support greater communication of the specific risk factors, FEMA FID created the Risk Rating 2.0 webpage on April 1, 2021⁵ which provides state, county, and zip code level premium impact as well as technical documents, to include an overall explanation of Risk Rating 2.0, the premium calculation worksheet, the rating factors, and a detailed explanation for levees in Risk Rating 2.0. Currently, NFIP policyholders can obtain an understanding of the impact of mitigation options by working with their NFIP insurer or agent. NFIP insurers and agents are able to provide premium quotes based on the mitigation options in the quote. To help insurers and agents explain the benefits of mitigation and to support policyholder understanding, the NFIP highlights the mitigation discount as a separate line item. In addition, FEMA FID developed a public-facing Discount Explanation Guide⁶ that provides information on the impact that mitigation options have on premiums.

FEMA FID recognizes both the challenges and the importance of communicating specific risk factors in a meaningful, simplified manner to agents and policyholders. These challenges are not unique to FEMA and are particularly inherent in any multi-variate rating system. Private market property and casualty carriers face similar hurdles and are still determining industry best practices. For example, private carriers have sought to pilot the ability to provide the top drivers of risk with an insurance quote but have struggled implementing this capability.

These efforts will include the following actions:

Actions	ECD
Update floodsmart.gov	January 31, 2024
Deploy a mitigation discount visualization tool	September 30, 2024
Pilot online quoting tool	April 30, 2025

Overall ECD: August 29, 2025.

⁵ <https://www.fema.gov/flood-insurance/risk-rating>

⁶ <https://agents.floodsmart.gov/sites/default/files/fema-Risk-Rating-2.0-discount-guide.pdf>

Text of Appendix III: Comments from the Department of Homeland Security

June 30, 2023

U.S. Department of Homeland Security

Washington, DC 205284

Alicia Puente Cackley

Director, Financial Markets and Community Investments

U.S. Government Accountability Office 441 G Street, NW

Washington, DC 20548

Frank Todisco

Chief Actuary, Applied Research and Methods

U.S. Government Accountability Office 441 G Street, NW

Washington, DC 20548

Re: Management Response to Draft Report GAO-23-105977, "FLOOD
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sound, equitable, easier to understand, and better reflect a property's flood risk. GAO also acknowledged in the 2023 High-Risk report¹ that, with the implementation of Risk Rating 2.0, the NFIP moved from "partially met" to "met" in three of five categories on its annual list of programs and operations that are vulnerable to waste, fraud, abuse, or mismanagement, or in need of transformation.

While GAO's draft report focused on options to address FEMA's NFIP debt, it is also important to note that FEMA is required to estimate flood insurance rates "based on consideration of the risk involved and accepted actuarial principles."² This premium is a prospective, actuarial measure of risk designed to cover expected future losses, not to recoup past unfavorable results or pay for earlier debt. FEMA does not factor into its premium an expense for debt or interest on the debt.³

The Department remains committed to achieving an equitable NFIP and has proposed legislation to, inter alia, (1) make flood insurance more affordable to low- and moderate- income policyholders through a means-tested assistance program, and (2) establish a framework to achieve solvency of NFIP. Additionally, FEMA remains committed to transparent and effective policyholder communication. While the NFIP has historically communicated with policyholders through the NFIP insurers, FEMA will continue to enhance communication both through the NFIP insurers and also more directly with the policyholders.

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Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

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² 42 United States Code (USC) 4014 "Estimates of premium rates," (<https://www.govinfo.gov/app/details/USCODE-2021-title42/USCODE-2021-title42-chap50-subchapl-sec4014>)

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JIM H. CRUMPACKER, CIA, CFE

Director

Departmental GAO-OIG Liaison Office

Enclosure

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Contained in GAO-23-105977

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and by incorporating discounts into the full-risk premium based on the
actuarial evaluation of risk reduction.**

Response: Concur. FEMA Resilience (RSL) Mitigation Directorate (MD) Floodplain Management Division (FPMD) agrees that CRS rating should be based on community activities that reduce flood risk. Accordingly, FEMA's MD FPMD is undertaking a multi-year effort to redesign the CRS program to better align with its improved understanding of flood risk and flood risk reduction approaches. On February 1, 2023, FEMA RSL MD FPMD established a CRS redesign workgroup that includes representation from NFIP insurance, mitigation, and floodplain management to lead this effort and evaluate how the CRS program can better incentivize community-level action to reduce the loss of life and property due to flood risk. Additionally, FEMA RSL MD FPMD is exploring potential paths forward for the CRS program that will increase the nation's resilience to future flooding, support the sound financial framework of the NFIP, and result in a more customer-centric CRS program. These efforts will include the following actions:

Actions: Estimated Completion Date (ECD)

Implement incremental program and process improvements for CRS: January 31, 2024

Develop alternative program designs and initiate public input collection: September 30, 2024

Finalize program design: September 30, 2025

Develop strategy for implementing new program design: March 31, 2026

Begin managing change and transition to new program design, including advance notice for NFIP program participants June 30, 2026

Begin implementation of new program design for CRS: December 31, 2027

Overall ECD: December 31, 2027.

Recommendation 2: Evaluate other means for incentivizing desirable community activities that cannot be actuarially justified but are currently a basis for discounts in CRS.

Response: Concur. FEMA RSL MD FPMD will evaluate other means for incentivizing community activities in the CRS program redesign previously described in this letter, and will also take the following actions:

Actions: ECD

Implement incremental program and process improvements for CRS: January 31, 2024

Initiate public input collection on incentivizing non-discount community activities: September 30, 2024

Finalize report on public input March 31, 2025

Complete CRS Communities Incentives report: August 29, 2025

Overall ECD: August 29, 2025.

Recommendation 3: Conduct and publish an annual actuarial report that includes the loss levels that full-risk premiums are designed to cover and that current discounted premiums are able to cover, and the associated uncertainty; the estimated premium revenue and shortfall for current and future years; and an evaluation of NFIP's fiscal outlook, including projections of future debt.

Response: Concur. By no later than the end of fiscal year 2025, FEMA Resilience Federal Insurance Directorate (FID) will publish its first annual actuarial report for the current rating plan, to include the items discussed in this draft report. As part of this, FEMA FID will develop the necessary analysis, draft effective accompanying

communication, and ensure the actuarial report is consistent with statutory reporting requirements and Actuarial Standards of Practice,⁴ as appropriate.

These efforts will include the following actions:

Actions: ECD

Develop analysis, draft communication, and ensure consistency with statutory reporting requirements and Actuarial Standards of Practice.: September 30, 2024

Finalize Draft Report and Begin Clearance Process March 31, 2025

Publish Final Report: September 30, 2025

It is also important to note that FEMA FID currently compiles multiple recurring reports related to the NFIP financial position, including:

- National Flood Insurance Program (NFIP) Fiscal Year Report to Congress: Biggert-Waters Flood Insurance Reform Act of 2012;
- National Flood Insurance Program Semi-Annual Debt Repayment Progress Report - Report to Congress and the Secretary of the Treasury;
- Quarterly Reserve Fund Report; and
- Quarterly Watermark - National Flood Insurance Program Financial Statement

These reports enable FEMA to satisfy existing statutory reporting requirements.

However, comprehensive, stream-lined reports would more clearly communicate

elements of the NFIP's financial position to Congress and the public. Accordingly, on April 21, 2023, DHS submitted to the 118th Congress 17 legislative proposals to reform FEMA's NFIP which will reduce reporting complexity. These legislative proposals include legislative reforms that would reduce the reporting complexity for the NFIP so that, in a two-year period, reports due to the Congress would be reduced from 15 to 4, while providing similar and more timely information.

Overall ECD: September 30, 2025.

⁴ Actuarial Standards of Practice, Actuarial Standards Board, <http://www.actuarialstandardsboard.org/standards-of-practice/>

Recommendation 4: Take steps to directly inform individual policyholders about Risk Rating 2.0 and make them aware of available information.

Response: Concur. Regardless of the rating methodology, FEMA agrees that individual policyholders should be informed about their flood risk and be able to obtain information about their flood insurance premium. FEMA FID will enhance policyholder communications, by reviewing the policyholder communication products and the public-facing websites to provide policyholders with more information about flood insurance.

With the implementation of Risk Rating 2.0, FEMA RSL FID Policyholder Services and Product Delivery Divisions updated policyholder communication products such as the policy declaration page, renewal notices, and annual Flood Insurance Reform Act notices that provide information about flood risk directly to policyholders. The updated declaration page provides information about the insured structure as well as itemized dollar amounts on the premiums, discounts, surcharges, and fees paid. The declaration page also refers policyholders to both a website and to their NFIP insurer to obtain more information about their flood risk. In addition, FEMA FID provides NFIP insurers with information for each quote provided to enable NFIP insurers and insurance agents to discuss flood risk with policyholders.

ECD: April 30, 2024.

Recommendation 5: Take steps to make available to policyholders, agents, or both more detailed property-specific flood risk information to help them better understand the justification for individual premiums and potential savings associated with available mitigation options.

Response: Concur. To support greater communication of the specific risk factors, FEMA FID created the Risk Rating 2.0 webpage on April 1, 2021⁵ which provides state, county, and zip code level premium impact as well as technical documents, to include an overall explanation of Risk Rating 2.0, the premium calculation worksheet, the rating factors, and a detailed explanation for levees in Risk Rating 2.0. Currently, NFIP policyholders can obtain an understanding of the impact of mitigation options by working with their NFIP insurer or agent. NFIP insurers and agents are able to provide premium quotes based on the mitigation options in the quote. To help insurers and agents explain the benefits of mitigation and to support policyholder understanding, the NFIP highlights the mitigation discount as a separate line item. In

⁵ <https://www.fema.gov/flood-insurance/risk-rating>

addition, FEMA FID developed a public-facing Discount Explanation Guide⁶ that provides information on the impact that mitigation options have on premiums.

FEMA FID recognizes both the challenges and the importance of communicating specific risk factors in a meaningful, simplified manner to agents and policyholders. These challenges are not unique to FEMA and are particularly inherent in any multi-variate rating system. Private market property and casualty carriers face similar hurdles and are still determining industry best practices. For example, private carriers have sought to pilot the ability to provide the top drivers of risk with an insurance quote but have struggled implementing this capability.

These efforts will include the following actions:

Actions: ECD

Update floodsmart.gov: January 31, 2024

Deploy a mitigation discount visualization tool: September 30, 2024

Pilot online quoting tool: April 30, 2025

Overall ECD: August 29, 2025.

⁶ <https://agents.floodsmart.gov/sites/default/files/fema-Risk-Rating-2.0-discount-guide.pdf>

Appendix IV: GAO Contacts and Staff Acknowledgments

GAO Contacts

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In addition to the contacts named above, Patrick Ward (Assistant Director), Christopher Forys (Analyst in Charge), Xiang Bi, Dylan Desjardins, Lijia Guo, Jocelyn Kuo, Jill Lacey, Sailaja Ledalla, Matthew Levie, Scott McNulty, Marc Molino, Angela Pun, Steve Ruszczyk, Jessica Sandler, Jennifer Schwartz, and Jeff Tessin made key contributions to this report.

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