



DRIVING LOSS REDUCTION THROUGH STATE-CREATED RESIDUAL INSURANCE MARKETS

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EXECUTIVE SUMMARY

State residual insurance programs, often referred to as “markets of last resort,” provide critical financial protection to property owners who cannot obtain insurance coverage in the private market. As climate change increases the frequency and magnitude of natural disasters, private insurers are pulling back in high-risk areas, leading to growing exposure in these state-created programs. This increasing risk, however, also creates growing fiscal challenges for residual markets. Risk mitigation is necessary to reduce future damages, improve the insurability of properties, and stabilize the fiscal position of residual insurance programs. Risk reduction is the only long-term solution to the stress rising risks are placing on property insurance. This report examines how state residual insurance markets are incorporating risk reduction strategies, identifies best practices, and provides recommendations for programs to enhance their risk reduction initiatives.

Three Primary Approaches to Risk Reduction

To date, residual markets have implemented three primary strategies to encourage property owners to invest in mitigation:

- 1. Premium reductions for specified mitigation measures.** Six residual programs offer standalone premium discounts for verified risk reduction measures. Discounts are awarded following measures being adopted and independently certified, with discounts ranging from 5% to 30% depending on the mitigation measure and its effectiveness.
- 2. Adoption of no-cost insurance endorsements that cover the costs of certain resilient rebuilding upgrades after a substantial loss.** Three programs offer policy endorsements that provide additional funds to upgrade a roof to FORTIFIED standards during post-disaster rebuilding or a qualified roof claim. Free and automatic enrollment ensures all eligible policyholders can benefit without requiring them to opt in, maximizing participation during post-disaster reconstruction.
- 3. Grant programs that fund disaster mitigation retrofits.** Three programs—two currently in operation and one recently ended—provide grants directly to policyholders for specific mitigation measures. Grant amounts across these programs range from \$3,000 for earthquake retrofits to \$10,000 for FORTIFIED roof installations. Programs target the highest-risk properties to maximize cost-effectiveness, providing funds before disasters strike to reduce future losses.

Best Practices for Adopting Risk Mitigation Programs in State Residual Insurance Markets

A detailed review of existing programs suggests best practices for the design and implementation of loss reduction programs by residual insurance markets:

- 1. Make the business case.** Successful programs focus on cost-effective mitigation measures with proven loss reduction benefits. Programs can target the riskiest properties to maximize benefits. Mitigation investments that lower future losses, reduce reinsurance costs, or make policyholders more insurable again by private insurers all advance business objectives of the residual programs. Cost-effective measures can also motivate additional state or federal funding.
- 2. Make participation easy for policyholders.** Successful programs minimize red tape and reduce the time burden on policyholders to participate. They streamline enrollment and certification processes and provide needed customer support, such as maintaining lists of approved contractors and developing user-friendly online customer-service portals.
- 3. Cultivate partnerships.** Effective programs build partnerships with a wide range of stakeholders, from builders to realtors. They may work with universities for research, their insurance regulator for guidance and approvals, and local non-governmental organizations for outreach. Collaboration with state and federal policymakers provides additional funding sources.
- 4. Establish a culture of risk reduction.** Programs with the most robust mitigation initiatives tend to have risk reduction woven into their mission and objectives. They have a champion closely advising or working within the program who views risk reduction as essential to insurability and who increases support for more expansive mitigation programs. Formal commitments to loss reduction outlined in enabling legislation or program strategy documents help launch and maintain a strong internal culture in support of risk reduction efforts.



INTRODUCTION

Disasters are large financial shocks for households, imposing wide-ranging costs for which most American households are unprepared. In the aftermath of disasters, insurance provides critical financial protection necessary for individuals, businesses, and communities to rebuild their lives and livelihoods when faced with devastating losses. Households with insurance have fewer unmet needs and fewer financial burdens; they are more likely to rebuild and have speedier recoveries (You and Kousky 2024; Turnham et al. 2011). Without adequate insurance coverage, the path to recovery becomes significantly more challenging (Rhodes and Besbris 2022).

The private insurance market has long struggled to provide coverage for certain catastrophic risks, particularly in regions prone to recurring natural disasters such as hurricanes, wildfires, and flooding. Losses from disasters impact an entire community simultaneously, and losses can be very severe, making insurance difficult to provide at a price that households are willing or able to pay (Kousky 2022). This persistent challenge has led to the creation of numerous state-created insurance programs across the country (Kousky 2011). These "residual insurance markets" or "markets of last resort" emerged in the 1960s to provide coverage in urban areas where private insurers were withdrawing coverage. Many other programs were established or expanded following major disasters in the 1990s that caused widespread market disruptions. Today, these programs operate in various forms across the United States, covering a range of disaster risks. Their primary goal is to make insurance available when it is otherwise not available on the private market.

Now, as the risks of weather-related extreme events increase, many of these programs face growing challenges. Across many states, private property insurance markets are showing signs of stress, with insurers pulling back or limiting coverage and raising deductibles and prices in vulnerable regions. This private market retreat leads to an increase in the number of residents needing to find coverage in the state markets of last resort. While residual programs provide essential financial protection to residents, they also face fiscal challenges as risks rise and their financial exposure grows. The only long-term solution to reduce the cost of disaster-related damages and stabilize insurance markets lies in comprehensive risk reduction. Implementing hazard mitigation measures for properties can reduce the risk of damages from a hazard event and drive down exposure for insurers. Insurance is easier to provide and less expensive when risks are lower.

Recognizing this imperative, several residual insurance programs have begun implementing various measures to encourage risk reduction among their policyholders. Our review of existing programs found three approaches that are currently in use:

1. providing reductions in premiums for policyholders who have adopted certain hazard mitigation measures,
2. adopting no-cost insurance endorsements that cover the additional costs of resilient rebuilding after substantial losses, and
3. establishing direct-to-household grant programs that fund disaster mitigation retrofits.

Many states have also adopted various loss reduction programs for all residents, such as disaster mitigation grant programs run by the state department of insurance or tax credits for residents who adopt mitigation measures. While these programs are important for driving cost-effective risk reduction more broadly for households in a state, here we focus exclusively on risk reduction in residual insurance markets for their policyholders.

In this report, we examine the approaches deployed by state-created insurance programs to promote risk reduction and identify best practices for implementation. This research offers practical insights for residual insurance markets that have not yet adopted any mitigation programs or are looking to expand or enhance their existing risk reduction efforts. By learning from impactful models, residual insurance markets can better protect their policyholders while simultaneously improving their own financial sustainability. Our findings are based on interviews with program administrators and advisors, a comprehensive review of the academic and policy literature, residual market program websites and reports, and annual report data on residual program coverage characteristics and size from the Property Insurance Plans Service Office (PIPSO). We undertook a case study analysis of the mitigation programs in operation as of the summer of 2024.

In the next section of the report, we provide general background on residual insurance programs. We then turn to a description of the three primary approaches currently used by these programs to support risk reduction. The following section synthesizes lessons across the programs discussing the importance of making the business case, helping ensure the program is easy to navigate for policyholders, securing key partnerships, and establishing a culture of risk reduction within the program.

BACKGROUND ON RESIDUAL INSURANCE PROGRAMS

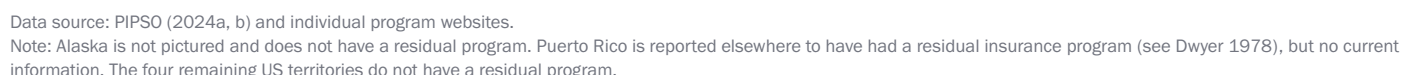
Before we explore the approaches by which residual markets are supporting risk mitigation, it is helpful to understand the history of residual markets, including what drove their creation and how they differ from the private insurance market.

Insurance provides critical financial protection against disasters. Yet, disasters stress the provision of private market insurance. When disasters strike, they affect many people in impacted locations at once, and the damage can be extremely costly. This creates a challenge for insurance companies: insurers collect regular payments from customers, but in severe disasters, losses can far exceed what they collect in premiums. To prepare for these rare but huge payouts, insurance companies need to hold large amounts of capital in reserve and make use of risk transfer instruments such as reinsurance (which is insurance for the insurance companies) or insurance-linked securities (which place risk into the financial markets). These risk transfer tools, while necessary to cover disaster risks, are not free for insurers and make disaster insurance coverage more expensive. In the extreme, the premium needed for a private insurer to profitably provide coverage can exceed what consumers are willing or able to pay, creating a breakdown in the private market (Kousky and Cooke 2012). When this occurs, governments, going back decades, have established insurance programs to provide coverage to those who cannot find it in the private market. Of note, residual insurance programs may not always be less expensive or may provide more restricted coverage as many programs were designed for availability, not necessarily affordability.

While there are federal programs in the U.S. to provide flood insurance, terrorism insurance, and insurance for nuclear reactors, other disaster insurance programs operate at the state level. This report focuses on the state-level programs. Residual insurance markets originated from federal legislation establishing Fair Access to Insurance Requirements (FAIR) plans—the Urban Property Insurance Protection and Reinsurance Act of 1968. The law was passed to address insurance shortages in urban areas due to civil unrest and exclusionary financing resulting from redlining and other discriminatory housing practices. Federal legislation allowed for federally subsidized reinsurance for losses from riots or civil disorder. Many of these programs have now expanded to cover other risks. The California FAIR Plan, for example, is now largely a program for wildfire coverage. Other state residual programs take different forms, including beach plans or wind pools that offer wind-only or full homeowners insurance coverage along hurricane-prone coasts; Florida Citizens and Louisiana Citizens, which operate as hybrid FAIR Plans and beach plans; and the California Earthquake Authority, which was established for earthquake coverage. Today, there are thirty-nine unique residual insurance programs operating in thirty-four states plus the District of Columbia (see Table 1 in the Appendix). Three of these states (Mississippi, North Carolina, and Texas) have a FAIR Plan and a separate beach plan, Alabama and South Carolina only have a beach plan, and California has both the FAIR Plan and the California Earthquake Authority (CEA) (see Figure 1).

Most programs were established following disasters that created crises in property markets, such as the Northridge earthquake, which led to the creation of the California Earthquake Authority, or Hurricane Andrew, which led to restructuring of Florida's residual market. Now, as climate change fuels more frequent and intense disasters around the country, multiple residual markets are under strain as more private insurers withdraw from high-risk

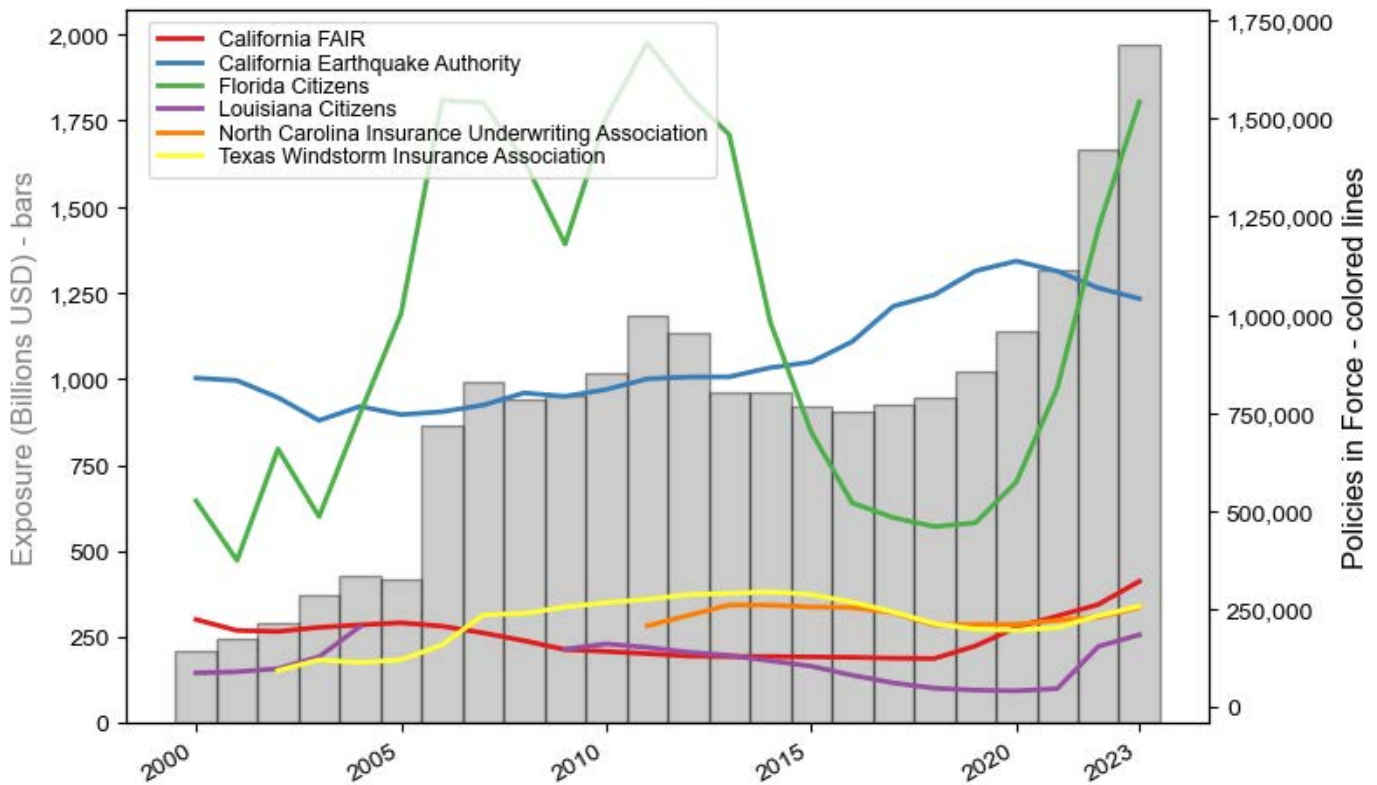
Map of residual insurance program availability and type.



Other residual insurance programs have seen modest increases in total policies. The Table in the Appendix provides information on the total exposure and the percent of households in the coverage area with a policy for all residual programs. According to PIPSO (2024) reports and the California Department of Insurance (n.d.), the programs with the highest exposure in 2023 were the California Earthquake Authority (\$664 billion), Florida Citizens (\$553 billion), California FAIR (\$278 billion), the North Carolina Insurance Underwriting Association (\$126 billion), and the Massachusetts Property Insurance Underwriting Association (\$98 billion). The programs with the highest percentage of policies among total households in the geographic area in which coverage is provided are North Carolina Insurance Underwriting Association (61%), Texas Windstorm Insurance Association (36%), Florida Citizens (18%), Louisiana Citizens (10%), and the California Earthquake Authority (8%). These states and their respective

FIGURE 2.

Total annual exposure (billions USD) for all state programs combined (gray bars) and total policies-in-force (colored lines) for select residual programs; 2000–2023.



Data source: PIPSO and the California Department of Insurance (n.d.).

Note: Policies in force represent the total number of active policies underwritten by each program. Data for total exposure from 2000-2005 excludes exposure amounts for the California Earthquake Authority, as exposure data was only available from 2006 onwards from the California Department of Insurance (n.d.).

programs also tend to earn the largest share of premiums as a portion of total market share, according to an analysis conducted by the American Property Casualty Insurance Association (2025).

State residual programs are established through state legislation but are not full public entities. They have varying quasi-public forms, with different governance structures, operational structures, and degrees of private industry involvement. They are not taxpayer funded (although a couple states have made one-time infusions of funds at different points), and the state is not a backstop for any program losses. Instead, most programs have assessment authority over insurance carriers operating in the state or directly over all policyholders in the state to cover losses from large disasters. That is, in a severe disaster year when losses exceed their available funds, the programs pay for the disaster claims by issuing assessments, either on the insurers operating in the state, or directly on policyholders throughout the state. This creates a cross-subsidy from low-risk and future policyholders to current policyholders. State residual programs are typically tax-exempt and not designed to maximize profit. While residual programs may offer both residential and commercial policies, this report focuses on residential policies, which make up the majority of the policies issued by state residual programs.

APPROACHES FOR RESIDUAL PROGRAMS TO DRIVE GREATER RISK REDUCTION

The unique financing, organizational structure, and broader missions of residual insurance programs can make them more able to promote risk reduction strategies for policyholders than private market insurers. Since residual markets are required to accept all eligible policyholders (some programs do have geographic restrictions), have no short-term profit incentive, and aim to ultimately return policyholders to the private market—all features that are quite unlike a private insurance firm—they have a greater incentive to encourage risk reduction among their policyholders. This not only reduces the residual program’s own losses but also makes it more likely that the policyholders will be able to find coverage again on the private market given a property’s increased ability to withstand damages in a future extreme event. During our research, one interviewee noted that a private insurer would never pay to lower losses for a policyholder, as they would be worried that the policyholder would simply move to a competitor, such that the original firm would be unable to recoup the benefits from the investment. The interviewee then stressed how, in most residual markets, by contrast, a key objective is moving policyholders back to private carriers. Hence, a residual program may be willing to invest in home mitigation for policyholders because if a policyholder is able to find coverage on the private market, that would be consistent with the residual insurer’s goals. Finally, the non-profit status of many residual programs often makes them mission driven rather than profit driven, underscoring the commitment many residual programs have to a broader mission of risk reduction coupled with risk transfer. One interviewee, discussing their mitigation programs noted: “that’s [risk mitigation] what we should be doing, especially with us being a non-profit.”

Our review of residual insurance programs identified three approaches currently used to encourage greater investments in loss reduction by policyholders. These include the following:

1. providing reductions in premiums for policyholders who have adopted certain hazard mitigation measures,
2. adopting of no-cost insurance endorsements that cover the additional costs of resilient rebuilding after substantial losses, and
3. establishing direct-to-household grant programs that fund disaster mitigation retrofits.

Table 1 provides an overview of residual programs that engage in each of these approaches. The green cells denote that the benefit is offered only by the residual market, while yellow cells denote that the benefit is available to all qualified residents of the state. Red cells indicate that the approach is not available for the program or state in which it operates. The most common approach of the residual programs is premium reductions for mitigation measures.

Insurance Institute for Business & Home Safety (IBHS) FORTIFIED Standard

The Insurance Institute for Business & Home Safety (IBHS) is a non-profit organization supported by the property insurance industry to perform building safety research to identify design, construction, and retrofit solutions and standards that reduce future losses and make homes and businesses more resilient. By testing how prototype buildings perform when exposed to lab-created extreme weather conditions, such as wind, rain, hail, and fire, the organization identifies best practices for survivable and insurable buildings. IBHS has developed specific designations based on this research: FORTIFIED, which addresses risk to structures from hurricane, high wind, and hail, and Wildfire Prepared, which addresses wildfire risk.

Multiple residual insurance programs have adopted different efforts to support FORTIFIED construction. FORTIFIED building standards, first established in 2010, are designed to reduce the risk to people and property of strong winds. The design increases the strength of the roof where it is attached, including along the perimeter, and also requires the roof to be sealed to avoid water entering the home. While IBHS has developed a suite of FORTIFIED standards for different types of building structures, FORTIFIED roof (formerly referred to as FORTIFIED Bronze) is one of the most common. As of May 2025, there were more than 78,000 FORTIFIED designated properties across thirty-one states.

According to IBHS, 70% to 90% of all catastrophe-related insurance claims include roof damage, and FORTIFIED dramatically lowers the risk of damage (Wright 2021). Following Hurricane Sally, which hit Alabama in 2020, analysis of insurance claim data found that FORTIFIED construction reduced loss frequency by 55% to 74%, loss severity by 14% to 40%, and loss ratios by 51% to 72% (AL DOI and Center for Risk and Insurance Research 2025). Similarly, a study conducted by the Institute for Advanced Analytics at North Carolina State University determined that homes with FORTIFIED roofs resulted in a 35% reduction in insurance claims reported and a 23% reduction in loss per building per storm (NCIUA 2024). Additionally, a recent report from the Louisiana Department of Insurance found that FORTIFIED roofs reduce a homeowner's uninsured losses over the long run by an average of \$213 per year (LA Legislative Auditor 2025). Some research also shows that the FORTIFIED designation has other benefits, such as increased property values and decreased damage to neighboring properties (Awondo et al. 2023; Petrolia et al. 2023). As a result of these well-documented benefits, some states have mandated that insurers provide premium discounts for FORTIFIED designations, and many insurers voluntarily do so given risk reduction benefits. In addition, a growing number of states have adopted grant programs to incentivize the installation of FORTIFIED roofs. Alabama has the largest share of FORTIFIED roofs: more than 50,000 as of 2024. The state's success is driven not only by their catalytic grant program, but also an array of additional incentives and outreach.

FORTIFIED roofs are more expensive than traditional roofs but also extremely cost-effective because the reduction in future losses is greater than the cost of installation. As noted on the IBHS website, an analysis conducted for Alabama found that the extra costs to upgrade roofs to FORTIFIED standards, once a roof replacement was already being done, ranged between \$700 and \$1,700, excluding the additional \$300–\$600 evaluation fee. Formal evaluation of the FORTIFIED construction by a licensed IBHS evaluator is necessary for any insurer to provide premium reductions. Insurers need this validation that the FORTIFIED upgrade has been completed to standards and will perform as intended. Evaluation also protects the homeowner and enables them to get the full benefits of the upgrade. A recent analysis in Alabama found that on average, FORTIFIED roofs that were inspected by an IBHS evaluator performed more than 50% better in a hurricane than homes built to a similar code but not evaluated (AL DOI and Center for Risk and Insurance Research 2025).

The majority of the risk reduction incentives offered by residual markets are focused on reducing wind damage by encouraging adoption of the FORTIFIED standard developed by the IBHS (see box, page 12). Wildfire mitigation measures in residual markets are less common, although there is also a standard offered by IBHS for wildfire-safe homes. For greater loss reduction from wildfires, mitigation measures at the community scale and in surrounding natural lands are also needed. IBHS recently launched a new wildfire certification focused on neighborhoods. Most earthquake loss reduction involves the adoption of “Brace and Bolt,” in which any walls in a crawl space are braced, and the foundation is bolted to the house frame to prevent the home from sliding off its foundation in an earthquake.

The approaches used by these programs tend to focus on property-level mitigation, with two exceptions. The California FAIR Plan offers premium reductions to Firewise USA® Communities, and the Alabama and Mississippi wind pools offer premium discounts to communities based on their Building Code Effectiveness Grading Schedule (BCEGS).¹ These are examples of rewarding community-level mitigation, as well as property-level investments. A look at the federal National Flood Insurance Program (NFIP) suggests two other mechanisms by which publicly created insurers could support community loss reduction. The first is conditioning insurance coverage on building codes or land use regulations. For residents of communities to be eligible to purchase flood insurance policies from the NFIP, the community must adopt minimum building code and land use regulations. This forces the adoption of baseline building requirements that have substantially reduced flood losses in participating communities (Kousky 2018). Second, the NFIP offers a sliding scale of premium reductions for a wide range of community flood risk management activities through the Community Rating System program, an incentive program for local governments to engage in greater flood risk management (Brody, Highfield, and Kang 2011; Gourevitch and Pinter 2023). Both of these suggest other tools that state residual markets could use to encourage greater risk reduction by communities, but since they are not in use currently, we do not further examine them in this report.

This section will discuss how each of the three key approaches outlined above operates within the residual programs. The approaches are not mutually exclusive, and many programs use more than one approach to reach more policyholders and accelerate the adoption of risk reduction investments. Lessons across the three approaches follow in the next section.

¹ Building Code Effectiveness Grading Schedule is a program administered by the Insurance Service Office (a subsidiary of Verisk) that evaluates building departments across the country for their building code adoption and enforcement and grades them on a scale of 1 to 10, with 1 being the best rating.

TABLE 1.

Summary of mitigation programs offered by select residual insurance programs

| Program | Premium Reductions | Endorsements | Grants |
|---|--|---|---|
| Alabama Insurance Underwriting Association (AIUA) | AIUA offers premium discounts to new homes built to FORTIFIED standards located in communities with Building Code Effectiveness Grading, structures that comply with International Residential Code, and structures with roofs retrofitted to FORTIFIED standards. | AIUA includes a free endorsement for FORTIFIED roof. | Strengthen Alabama Homes run by the Alabama Department of Insurance has provided grants of \$10,000 for FORTIFIED upgrades to all eligible homes in Mobile and Baldwin counties since 2015. |
| | | Legislation passed in Alabama requires homeowners insurers to offer a FORTIFIED endorsement for a premium they set. | |
| California FAIR | The Safer from Wildfire program requires all insurers to develop discounts for homeowners who adopt actions to make their homes (e.g., a Class A fire-rated roof) and/or the surrounding environment (clear vegetation) more resilient to fire risk. Discounts are also required for homeowners who live in a designated Firewise USA® Community. Private insurers are free to establish the discounts for their policies. | | |
| | The same regulations apply to the California FAIR Plan and they have adopted their own percentage reductions that will differ from private insurers. | | |
| California Earthquake Authority (CEA) | CEA provides premium discounts for single-family and mobile homes with seismic retrofits. | | Previously, eligible homeowners could apply for the CEA Brace + Bolt (CEA BB) grant, which provides grants up to \$3,000. |
| | | | Separately, the Earthquake Brace + Bolt (EBB) program, run by the California Residential Mitigation Program (CRMP), provides grants up to \$3,000 for seismic retrofits. The CRMP also has the Earthquake Soft Story (ESS) grant program. |
| Florida Citizens (Citizens) | Premium discounts on Citizens policies are offered for wind mitigation features for all single-family homes on the wind portion of the policy along with additional discounts for structures compliant with Florida Building Code (depending on location and year built) and roof construction features. | | Enacted by state legislation in 2022, the My Safe Florida Home program provides wind mitigation grants up to \$10,000 for upgrades to roofs, structures, doors and windows. |
| | The Florida Office of Insurance Regulation also mandates discounts for wind mitigation for all insurers. | | |
| Georgia Underwriting Association (GUA) | GUA offers a premium discount of 5%-10%, depending on the level of FORTIFIED standard adopted. | | |

| Program | Premium Reductions | Endorsements | Grants |
|--|--|--|--|
| Louisiana Citizens Property Insurance Corporation (Louisiana Citizens) | As of 2023, insurers in the state must offer discounts for homeowners who obtain a FORTIFIED designation. | | Louisiana Fortify Homes Program provides \$10,000 grants to any eligible policyholder in the state regardless of insurer via a lottery. |
| Mississippi Windstorm Underwriting Association (MWUA) | All private insurers are mandated to provide discounts for residential properties with FORTIFIED certifications, although the discounts are set by the insurers. | A MWUA endorsement provides funds for a FORTIFIED roof installation if a covered claim results in at least 50% of the roof needing repair. | Strengthen Mississippi Homes offers \$10,000 grants to install FORTIFIED roofs to any eligible policyholder in the state regardless of insurer. |
| | MWUA provides premium discounts for homeowners who have retrofitted their roofs to withstand hurricane-force winds. Discounts are provided on a sliding scale for the level of FORTIFIED, ranging from 17% to 30% (for IBHS Gold) and for residential properties built in communities adhering to BCEGS. | | |
| New York Property Insurance Underwriting Association | | | Grants of less than \$3,000 are provided to policyholders to cover the costs of performing a windstorm eligibility inspection. |
| North Carolina Insurance Underwriting Association (NCIUA) | Discounts are available to all policyholders in the eighteen coastal counties, for certified IBHS FORTIFIED structures. | NCIUA offers a no-cost endorsements that provides up to \$5,000 for a FORTIFIED roof following a claim that includes a roof replacement. | NCIUA operates two grant programs: the Strengthen Your Roof program operates in the Outer Banks offering up to \$10,000 to install and certify a FORTIFIED roof and the Strengthen Your Coastal Roof program (with funding from the NC general assembly) offers up to \$6,000 for eligible properties in some coastal communities. |
| South Carolina Wind and Hail Underwriting Association (SCWHUA) | Premium credits available for various wind mitigation actions. | | South Carolina Safe Home Mitigation Grant Program, administered by the South Carolina Department of Insurance, provides matching and non-matching grants to retrofit owner-occupied, single-family homes. Depending on the retrofit, the grant amounts ranges from \$3,000 to \$7,500. |

Note: The above table only reflects those residual programs that have adopted or showcase risk mitigation actions. Cells coded **green** are measures administered by the residual program, cells coded **yellow** are administered by the state but are available to program policyholders, and cells coded **red** indicate the approach is not available for that program or the state in which it operates.

Source: Individual program websites and interviews conducted with program employees and advisors.

Premium Reductions for Specified Mitigation Measures

Seven residual programs in six states (see Table 1) offer program-specific premium discounts for residential policyholders when they adopt certain loss reduction measures. The majority focus on structural measures to the building. As noted above, three programs also reward policyholders in communities that have taken risk reduction measures. The Alabama Insurance Underwriting Association (AIUA) and the Mississippi Wind Underwriting Association (MWUA) provide discounts to insured homes located in communities that participate in the BCEGS program. The CA Fair Plan offers an additional 10% discount for policyholders located in a Firewise USA® Community.

Across programs that offer these discounts, some commonalities emerge. They all require some type of independent certification or verification to receive the premium credit. For many, this is a FORTIFIED evaluation. The California Earthquake Authority (CEA) offers premium discounts—what it terms a Hazard Reduction Discount (HRD)—to eligible properties,² but to receive the discount, homeowners must hire a contractor or structural engineer to inspect and verify that the retrofit meets standards. The California FAIR Plan offers discounts to policyholders located in Firewise USA® Communities, but policyholders must submit a certificate and copy of a survey indicating their home is within a Firewise boundary to qualify for the discount.

To preserve fiscal soundness, any premium discounts must accurately reflect reductions in future claims payments (Kousky and Kunreuther 2018). Still, the discounts offered vary. CEA discounts range from 10% to 25% depending on the building's foundation type and the year the property was built. Discounts of 21% are also available through the CEA for mobile homes that have been seismically retrofitted according to standards set by the California Department of Housing and Community Development. MWUA offers premium discounts on a sliding scale for the different levels of FORTIFIED, ranging from 17% to 30% for Gold. The Georgia Underwriting Association also offers FORTIFIED discounts, but these only range from 5% to 10%. The California FAIR plan recently began offering discounts of 5% for policyholders who maintain defensible space around their property and 10% for policyholders whose properties meet a series of structural hardening measures.

In addition to premium reductions offered directly through the residual programs, several states have mandated that all insurers operating in the state, including the residual program, provide premium reductions for certain mitigation measures. In Alabama, the state suggests the amount of the discount applicable to the wind portion of the premium depending on the level of mitigation. In California, through the Safer from Wildfires program, the insurance commissioner requires discounts to be offered by insurers writing wildfire coverage for investments in structural protection and for creating defensible space around the home. The regulator does not dictate the amounts of these reductions; the California FAIR plan has thus set and published its own reductions, which may be different from those offered by private insurers.

Economists have long argued for insurance to be priced at levels that reflect the underlying risk, including premium discounts for households that adopt risk reduction measures that lower expected future losses, to incentivize optimal levels of protective investment (e.g., Kunreuther 1978). The assumption is that premium discounts act as both an information signal to homeowners about measures that would lower losses and a financial incentive to adopt those when cost-effective. That said, there is not good evidence on the extent to which discounts incentivize more adoption of mitigation measures than would be undertaken in

² The home must be built before 1980, be of wood-frame construction, raised or non-slab foundation, and retrofitted to California Existing Building Code (CEBC) standards.

their absence, although some note they are still needed for perceived fairness among policyholders. The premium savings alone may not be enough to finance the investment, although interviewees noted that mitigation does more than just reduce premiums but also reduces many types of uninsured losses and protects irreplaceable items. That said, the evidence on how consumers understand or weigh the various benefits from mitigation measures is mixed (Javeline and Kijewski-Correa 2019; Chiew et al. 2020; Zinda et al. 2021; Martin et al. 2024). The National Institute of Building Sciences has highlighted that disaster mitigation typically provides substantially more benefits to society as a whole, but perhaps not to the individual, thus limiting investment; institutionally aligning many beneficiaries to co-fund mitigation could result in more widespread adoption (Porter et al. 2023).

Endorsements for Mitigation Measures During Rebuilding

Endorsements are additional coverages added to a standard insurance policy. One type of endorsement that supports loss reduction is offering additional funding at the time of a claim to support defined mitigation activities. Three residual programs—AIUA, MWUA, and NCIUA—have adopted free endorsements that provide policyholders additional financial assistance for the installation of an IBHS FORTIFIED roof following a loss that results in substantial damage to the property (50% or more of the property value) or significant roof damage.

The value of the endorsement differs from state to state and may not cover the full cost of the upgrade. For example, the MWUA wind pool program reimburses an additional \$1,500 for materials and labor and \$500 for an inspection and evaluation of a FORTIFIED Roof. The North Carolina endorsement offers up to \$5,000 as well as up to \$600 for an IBHS Evaluator, which should be sufficient to cover the upgrade when a new roof is already being installed (see box, page 12). The NCIUA tracks participation and since its inception in 2016, 4,921 policyholders have opted to install a FORTIFIED roof following a qualifying claim.

Since endorsements provide additional coverage to homeowners and thus potentially higher payouts, in the private market they are typically accompanied by an increased premium or additional fee. The FORTIFIED endorsements provided by state residual programs, notably, are free to eligible policyholders. This partially reflects the modest costs of upgrading to a FORTIFIED roof once a replacement is already needed, as well as the mission of many residual programs to also lessen exposure to growing risks. An interviewee noted that as a non-profit organization, endorsements that help to lower risk and protect policyholders are aligned with the program's mission. A free endorsement also helps to address affordability challenges that would otherwise limit uptake among homeowners already struggling to pay insurance premiums.

The endorsements offered by state-residual markets not only cover the construction costs associated with the higher-standard FORTIFIED roof but also the cost of an IBHS evaluator. Several interviews highlighted the importance of covering these evaluation costs as well as construction costs. If not paid for, homeowners may be unwilling or unable to cover these costs on their own, which may result in them forgoing the certification and the resulting benefits, including lower premiums, or not being guaranteed that the work has been done properly.

Another key feature of these endorsements is that they are automatically included for eligible policyholders. This also differs from the private sector, where additional coverages require policyholders to actively opt in. Our interviews suggest this type of automatic enrollment is helpful because policyholders may not have sufficient knowledge of the risks and risk-reduction measures or understanding of the role of an endorsement to be motivated to self-select into coverage. Research has found that for a private flood

endorsement that paid for rebuilding with flood-resilient materials, switching from an opt-in to an opt-out enrollment increased take-up from 12% to 32% (Conell-Price et al. 2022). Automatic coverage can thus boost participation, but as one interviewee noted, it also requires additional outreach to policyholders at the time of a loss to ensure the endorsement is actually used.

An interviewee noted one potential policyholder concern is that it could slow rebuilding. Multiple interviewees stressed the need to build up a workforce of builders trained in the construction method and evaluators, such that safer rebuilding and certification does not add time to reconstruction. North Carolina, for example, has taken proactive steps to conduct outreach and training with construction trades, expanding the number of qualified builders and contractors who understand the IBHS standards, enabling policyholders to more easily use the endorsement after a loss.

While there may be opportunities for state residual markets to expand endorsements beyond FORTIFIED standards to other mitigation measures and perils, there are some limits to expansion. The FORTIFIED endorsement is effective because there is a clear, cost-effective standard that can be broadly applied. For mitigation measures that are very expensive, such as elevating a home, a free endorsement, even offered by a public program, may be too costly or logistically burdensome. This means endorsements must focus on low-cost, high-impact interventions, specifically activities that can be completed with a smaller amount of funding. More expensive retrofits may strain the budgets of state residual markets.

Grants for Disaster Mitigation Measures

Grants are lump sums provided to policyholders to cover the costs of approved home modifications to reduce risk and, unlike loans, do not need to be repaid. As shown in Table 1, three residual markets offer grant programs to their own policyholders for mitigation. The residual market programs vary in the amount offered, but all focus on proven, well-defined, and cost-effective measures. The grant programs work to either lower future claims for the program, if the strengthened homes stay in the residual market, or make the properties more insurable, such that they may find private coverage. Both fulfill objectives of residual programs. As noted above, being comfortable with policyholders leaving for other insurers is unique to residual markets; private carriers have an interest in keeping their lower-risk policyholders.

The NCIUA administers two grant programs for installation of roofs meeting IBHS FORTIFIED standards. The Strengthen Your Roof program was launched in 2018 and targets properties in the Outer Banks and barrier islands. Grants of up to \$10,000 are provided for the costs of construction and can also cover the costs of the IBHS evaluation. To date, the program has upgraded over 8,680 roofs. The Strengthen Your Coastal Roof program was launched in 2022 for a broader coastal region and has also received partial funding from the North Carolina General Assembly. These grants are up to \$6,000 for the construction and an additional up to \$600 for the IBHS evaluation. In this program, more than 2,600 grants have been made to date.

The California Earthquake Authority (CEA) previously (2016–2023) provided a grant program for policyholders to “Brace + Bolt” their home, which reduces the likelihood of a house shifting off its foundation during an earthquake. This program recently ended when response from policyholders waned. It had provided homeowners with \$3,000 grants. The grant award, according to an interviewee, was significantly less than the median cost of completing the retrofit with a contractor, which could be more than \$5,000. Homeowners

would have to cover the remaining costs. That policyholder grant program complemented the Earthquake Brace + Bolt, Earthquake Soft-Story, and Earthquake Multi-Unit Retrofit grant programs run by the California Residential Mitigation Program (CRMP) for any state resident. The CRMP was created in 2011 by CEA and the California Office of Emergency Services (Cal OES) through a Joint Powers of Authority Agreement. It is a legally separate entity, managed by its own board, which has two members from CEA and two from Cal OES. All staff, however, are CEA employees, and activities are supported from CEA's loss mitigation fund (by statute, this is 5% of CEA investment income), as well as FEMA grants. While these programs are open to non-policyholders, around 30% of applicants do have a CEA policy.

All of the grant programs tend to focus on the riskiest properties. All programs require certification and support grant recipients in finding a contractor or builder and an evaluator. The programs have also all aimed to improve customer experience. The CEA, for instance, analyzed each year the riskiest areas with structures in need of retrofits and would open applications in a set of ZIP Codes such that available funding was sufficient to provide grants for all applicants. The goal was to prevent long waiting lists, which frustrate consumers. The NCIUA developed an easy-to-use online portal that guides grant recipients through the entire process. Typically, across programs, homeowners are expected to get bids from preapproved contractors and homeowners are reimbursed through the grant—up to the eligible grant amount—once the project is complete.

The funding sources used to cover the grants vary across the three programs. In North Carolina, one of the grant programs is entirely paid for through NCIUA's own revenues (the Strengthen Your Roof program), as NCIUA found it would lower future losses and reduce reinsurance needs and thus reinsurance costs. The second NCIUA grant program (the Strengthen Your Coastal Roof program) has partial support from state appropriations; for each funding period, the association and the state have put in matching amounts of funds. This annual process of requesting funds brings challenges because there is no guarantee how much funding will be available each year and the NCIUA has been exploring more sustainable funding options. In addition, the Strengthen Your Roof program has a partnership with the Robert Wood Johnson Foundation and North Carolina Clean Energy that allows partners to cover additional costs beyond the grant award for low-income households. This partnership also helps to provide additional weatherization retrofits. For the California Earthquake Authority, mitigation funding was built into its enabling legislation in 1984. By statute, 5% of investment income, up to a maximum of \$5 million, must go into a loss mitigation fund. State appropriations and FEMA's Hazard Mitigation Grant Program (HMGP) have provided additional funding. This can present challenges as the FEMA grants operate on a reimbursable basis, meaning CEA has to pay the policyholder before they are able to get reimbursed from FEMA, raising difficulties with cash flow. While facilitating an expansion of the program, FEMA grants are also not guaranteed sources of funding as the current reductions to FEMA grant programs highlight.

A key challenge is setting the grant amount. Premium reductions and endorsements require careful actuarial calculations because they intervene directly in premium payment and claims processes. Grants work outside these mechanisms, but nonetheless, grants need to be cost-effective, and budgetary constraints must be balanced alongside retrofitting as many homes as possible. In North Carolina, the grant ceiling is above the median cost of a FORTIFIED roof. According to interviewees, an ideal grant amount aims to cover all costs for people with modest homes and modest means who might not otherwise consider replacing their roofs, while still providing a substantial incentive for wealthier residents. In contrast, the CEA Brace + Bolt program offered a more limited grant of \$3,000, less than the

\$5,200 median cost of the retrofit. An interviewee explained that while some financially constrained households may not participate at that amount, increasing the grant award would disproportionately benefit wealthier households with more expensive retrofits and risk driving up prices. At least two interviewees noted concerns and anecdotal evidence that higher grant awards could lead contractors and other construction trades to raise their prices to match the grant funding.

A few states offer grants more broadly to residents. Of note, a program in Alabama, Strengthen Alabama Homes, has paid to fortify more than 8,600 roofs in the state, catalyzing even greater adoption across the state (AL DOI and Center for Risk and Insurance Research 2025). While it works closely with the Alabama Insurance Underwriting Association (AIUA), it is managed by the Alabama Department of Insurance. Given the focus of this report on residual insurance programs, we have not featured state programs in this report but, it is worth noting that given the varying structures of residual markets and state regulations, not all residual insurance programs have the authority to offer grants, and partnerships may be a preferred approach. Another example is the partnership between the CEA and Cal OES on a grant program for earthquake retrofits that draws on CEA expertise and staff. In contrast with endorsements, which only operate when a qualifying claim is granted, and building codes, which generally only affect new construction, grants have the potential to retrofit homes and reduce risk in existing building stock pre-disaster, either within the insured pool or among a broader eligible population, and avoid the costs, disruptions, and dislocations associated with disaster-related losses.

PROGRAM LESSONS

While the different risk reduction approaches in the prior section are distinct from one another in terms of offerings, eligibility, and policyholder reach, the deployment and implementation of these across the state residual insurance programs highlights some consistency and lessons critical for implementation and success. Our review of the risk reduction approaches used by residual insurance markets suggests four lessons, which we discuss here: make the business case, make it easy on the policyholder, cultivate relationships, and establish a culture of risk reduction.

1. Make the Business Case

Across the three approaches, there was a consistent indication that programs succeed when they focus on cost-effective measures. For both endorsements and grants, several interviewees stressed that the economic benefits of avoided future losses outweighed the costs. Having clear documentation of these economic benefits was necessary to drive funding support. For example, NCIUA partnered on a study that found policyholders with FORTIFIED roofs saw a reduction in claims and damage amounts (NCIUA 2024). Similarly, Alabama partnered on a study that demonstrated that following Hurricane Sally in 2020, FORTIFIED homes were less likely to have claims and loss severity declined by 14% to 45% (AL DOI and Center for Risk and Insurance Research 2025).

Another instructive example comes from the California Earthquake Authority. One interviewee shared that the CEA initially provided a 5% discount for earthquake retrofits but suspected this discount was not reflective of the true savings in mitigated losses, which could weaken consumer interest in investing in a retrofit for their home. To clarify the cost savings of seismic retrofits, the CEA worked with the Pacific Earthquake Engineering Center at the University of California, Berkeley to conduct an assessment to quantify the reductions in damage associated with the retrofits. The research found that the mitigation saved between 20% and 40% of the replacement value of the home in damages, which was eight to fourteen times greater benefits than the cost of mitigation (Rabinovici and Reis 2020). This led to change in premium discounts to more closely align with reduced damages. These examples demonstrate the importance of residual programs investing in studies and data that document the economic costs and benefits of their interventions.

Cost-effectiveness can also be enhanced through program design and criteria used for determining eligibility criteria. For instance, multiple programs prioritize mitigation support for the riskiest properties, where the benefits in loss reduction are much greater, creating larger benefits and faster payback periods. The CEA, for example, targets older homes that are more vulnerable to earthquakes, and both the CEA and NCIUA target the highest-risk geographies for their grants.

Finally, our case studies highlight that leveraging diverse funding sources can enhance a program's reach. The CEA was able to offer more grants to policyholders by leveraging FEMA grant dollars. In North Carolina, the Strengthen Your Coastal Roof program obtained a state match for their grant program for multiple years. Federal grants require detailed benefit-cost analysis (BCAs) and state funds may be easier to obtain when the cost-effectiveness is clear. NCIUA has recently found another source of mitigation funding built on making the business case for loss reduction. Like other insurers, they make use of catastrophe bonds along with reinsurance, to protect their ability to pay claims in high loss

years. In 2025, they issued an innovative catastrophe bond that includes a resilience component—the first time this has been done. In years in which there is not a severe loss, the NCIUA will get funding back to invest into its mitigation programs (Evans 2025).

2. Make It Easy on the Policyholder

A common theme across all the case studies was that participation in the program has to be easy for the policyholder. This required reducing the burden and time required for participation and limiting red tape. How this is achieved varies by program. For example, many programs keep lists of pre-approved contractors, builders, or evaluators to assist policyholders in quickly finding professionals who can complete mitigation work. For endorsements, having all policyholders automatically enrolled in the coverage without having to opt in or pay an additional premium secured it was available to all without any additional time or effort required of the policyholder.

Both the CEA and NCIUA have invested substantially in services to ease customer burden. An interviewee noted that the CEA has invested in a well-staffed and responsive customer service center. In North Carolina, the NCIUA has developed an online portal that is easy to use and takes policyholders through each step simply and quickly. NCIUA has amassed positive testimonies from grant recipients noting the application process was “quick and easy,” that they were “very impressed with the entire process,” that the website was “surprisingly easy,” and the process “simple top to bottom,” (NCIUA 2024). One interviewee told us that attention to customer experience leads to great relationships between the residual program and its policyholders because the “policyholders feel that [the program] is trying to reinvest in them and that feels good.”

Several programs also focused on limiting time burdens or other difficulties navigating the program to ensure policyholders were not discouraged from participating or did not drop out due to frustration with the process. For one program, this included sizing the eligibility pool to the amount of available funds to avoid waiting lists, as noted above. Having pre-inspections or easy ways to verify eligibility quickly before getting too far into a program was noted as improving the policyholder experience and preventing them from expecting a benefit they could not receive. One interviewee summarized the value of creating positive policyholder experiences this way: “the more impediments you throw in front of the homeowner, the more likely they are to drop out [and not use a program].”

Another message was that it is important to create a robust outreach campaign to ensure policyholders are aware of the programs and how to use them. This includes mention of user-friendly websites, videos, and information booths at community events. Most grant programs received more interest than the number of awards granted, but outreach was still critical to inform eligible policyholders. For endorsements, outreach is also needed at the time of a loss, to make sure policyholders know they have the additional coverage to rebuild to safer standards. Multiple programs host webinars or other opportunities for policyholders to learn about the program and get questions answered. Several interviewees noted that partners could also be key messengers about the programs. This could be builders who become trained in the mitigation measures, disaster recovery organizations that engage in outreach around risk reduction, realtors, and others working directly with policyholders.

3. Cultivate Partnerships

Every interviewee noted the necessity of partnerships for success and greater impact. Interviewees and program documents highlighted that effective and scalable

implementation is often contingent upon a broad network of partners. As a result, impactful programs must spend time building and cultivating relationships with various external groups.

One stakeholder group that was repeatedly referenced was construction trades: builders, contractors, roofers, and inspectors and evaluators. Interviewees noted that mitigation programs cannot succeed without the workforce to undertake the needed retrofits and rebuilds, as several mitigation measures require specialized training and understanding of the measures. After launching programs and hearing from policyholders that they were unable to find a builder or contractor, some programs have built purposeful relationships with these professionals to scale and grow adoption of the risk mitigation strategies. For example, an interviewee noted that early in NCIUA's delivery of mitigation programs, there were not enough FORTIFIED evaluators in the state. To address this, NCIUA began training independent claims adjusters to also be FORTIFIED evaluators to expand the number of professionals who could conduct these evaluations.

Residual insurance programs have employed a range of strategies to develop partnerships with these groups. One is to offer trainings, sometimes in partnership with other organizations. The North Carolina and California programs, for example, hold regular trainings with construction trades. This has helped to generate greater familiarity with mitigation measures and build a list of local professionals trained in the specific risk mitigation strategies. In North Carolina, these successful collaborations have also fostered contractors who are now promoters of the state residual programs and play an important role in educating residents about the potential benefits of the higher-standard roof. Indeed, programs have found that cross-promotion can be beneficial, with the residual program providing lists of trained professionals and those professionals advocating for the program. Demand from customers due to the residual market grant program or other incentives can also incentivize those in construction to invest in the needed training since they know there will be customers.

Realtors are another key stakeholder group several interviewees mentioned. When realtors understand not only the hazard risks but also the risk reduction measures and the benefits they provide, then the measures start to be rewarded in the market, such as through higher property values, and awareness of mitigation spreads. We heard that in Alabama, many realtors are aware that FORTIFIED homes sell at a premium and explain this to clients. Similarly, insurance agents serving NCIUA policyholders promote the grant program to their clients (NCIUA 2024).

The programs also noted the importance of partnerships with state and federal governmental agencies and policymakers. As noted above, partnerships with federal agencies or state legislatures can generate additional program funding. In cases where residual programs do not manage grant programs themselves, several promote risk mitigation by referring and connecting policyholders to grant programs administered by state agencies. AIUA in Alabama, for example, highlights Strengthen Alabama Homes (administered by the Alabama Department of Insurance) in several of its resources. And the CEA partnered directly with the California Office of Emergency Services on creating a statewide grant program. This highlights how strong partnerships with government agencies can help residual markets promote risk reduction even when not directly offering the services.

Several programs also noted the benefits of a close working relationship with the insurance regulator. This can be especially important for measures like premium reductions or endorsements, which would typically need approval by the insurance commissioner's office. An example comes from the AIUA. When premium discounts were initially

discussed for the program, there was concern that if the discounts turned out to be mispriced or the program was generally underpricing risk, the program would run into fiscal difficulties. But due to the high level of trust between the program and regulators, they felt they would not face regulatory pushback if future rate increases were needed in response to a program deficit and thus adopted the discounts. Following years of low losses, the premium discounts for mitigation continue.

Several residual programs have developed partnerships with local universities for research that can support mitigation efforts. This includes studies of the loss reduction savings that can be used in accurately pricing or motivating additional funding for mitigation, as noted above. It can also involve studies on consumer demand and needs, as well as effective messaging. Especially for the wind programs, close partnerships with IBHS were also instrumental in supporting efforts and demonstrating the evidence base.

Creating partnerships across jurisdictional boundaries, including state lines, can also support state residual markets in scaling their risk mitigation efforts. Our interviews highlighted the importance of talking with experts from other states to share ideas and experiences. Many programs indicated an eagerness not only to learn but to actively “pay it forward” by sharing lessons and insights from their program with other states. These types of engagements can help states work through challenges, particularly as more states consider incorporating risk mitigation into their residual insurance programs.

Focusing on building external partnerships not only helps to scale risk mitigation programs but also builds capacity for state residual programs. It also helps to generate deeper awareness and understanding by reaching policyholders through trusted messengers and through traditional information channels.

4. Establish a Culture of Risk Reduction

While interviewees differ in the degree to which they believe risk mitigation should be an objective of a residual insurance market, it was clear that when risk reduction is woven into the identity and mission of the program, greater investments in risk reduction programs result. Each program we researched is focused on the reentry of policyholders into the private market, but the broader goals of the programs varied considerably, influencing the willingness and levers available to support risk mitigation activities. This variation is driven by several factors, including programs’ enabling legislation, missions, attitudes about the boundaries of their responsibilities, and governance structures. One interviewee noted that variations in commitment to risk reduction across residual market programs could be explained by a “huge cultural difference.”

In interviews, we heard that formalizing a commitment to loss reduction in enabling legislation or in program strategy was critical to supporting more expansive efforts around hazard mitigation. For example, by statute, the CEA is required to set funds aside for mitigation and one of the board-affirmed goals in their strategic plan is mitigation. In addition, having a champion or leader within a program to drive the program design, adoption, and expansion strengthened efforts to support mitigation for policyholders. Another consideration of program design and offerings that can shape the culture of the program is how the problem is viewed. For example, one interview noted, “this isn’t an insurance problem; it’s a loss problem,” and noted that this perspective led to a heavy focus on enabling more mitigation.



Damage and destruction on the west coast of Florida (Naples, Matlacha, Pine Island) caused by Hurricane Ian
CREDIT: CHASE GUTTMAN

Views on mitigation and the role of the residual market could also explain which types of mitigation programs were adopted. Premium reductions were much more common than endorsements or grant programs. This could be because they are likely viewed as core to the primary business of writing insurance. Some of our interviewees viewed grants as outside the scope of an insurance program and thought such programs should be provided by other state agencies or programs. Grant programs are also a much larger financial lift. Some noted that when funding is provided through state resources, policymakers may prefer to make the grant program more broadly applicable rather than limiting eligibility to residual market policyholders. That said, the few programs with mitigation grants view them as core to their operation and mission of lowering risk and supporting the reentry of policyholders into the private insurance market.

CONCLUSION

The increasing frequency and intensity of natural disasters as our planet warms is stressing insurance markets. As more private insurers withdraw from high-risk areas, policy counts in many residual insurance programs are growing. These programs provide necessary financial protection from severe disasters, but most of these programs are not designed to cover large numbers of policyholders and have as a primary goal reducing the number of policyholders on their rolls. This, along with their non-profit status, gives residual markets a unique interest in supporting policyholders in lowering their risk and making them more insurable by the private sector. The report explored how various state residual markets have begun to incorporate risk mitigation strategies to help address growing risk.

Though governance structures and regulation greatly shape the types of services and offerings that different state residual markets provide, we identified three primary risk reduction approaches used by residual insurance markets across the country: (1) premium discounts offered for certain risk mitigation activities, (2) no-cost endorsements providing additional coverage to adopt specific risk mitigation measures during rebuilding, and (3) policyholder grant programs to cover the cost of certain risk mitigation activities pre-disaster. We also found that several programs offer a combination of approaches, allowing them to provide mitigation to a wider array of policyholders.

Through case study analysis, interviews, and review of existing literature, we identified best practices for other residual programs considering risk mitigation offerings. The first was making the business case. As quasi-governmental entities, programs must be able to show that mitigation incentives minimize negative financial impacts to the organization. Many residual markets offering risk mitigation incentives emphasized the importance of highlighting how this work is cost-effective, justifying the expense, and potentially attracting funding from state and federal governments. Second, we repeatedly heard that participation should be easy for policyholders. This included careful attention to customer service to drive participation, including limiting administrative hurdles and helping connect policyholders to other key experts necessary to complete risk mitigation projects. Third, programs need to cultivate a variety of partnerships. Partnerships were identified as vital to completing risk mitigation projects, encouraging participation, understanding trends and impacts, and garnering additional funding. Finally, the residual insurance programs that did the most to drive loss reduction among policyholders had cultures of risk reduction. When mitigation was recognized in enabling legislation, in strategy plans, in missions and objectives, and among leaders, more robust offerings were developed. These lessons provide insights for existing residual programs considering incorporating risk mitigation incentives, as well as for new state residual programs that are emerging as access to private insurance becomes more limited.

Many open questions remain for future research. One is whether residual insurance markets could do more to support community-scale risk reduction, such as offering incentives when communities invest in risk reduction programs or infrastructure or conditioning coverage based on local land use and building codes as has been done through the NFIP. As we noted, while a couple of programs recognize community actions with premium discounts, most programs focus on home-level risk reduction. Research indicates building codes and land use can play an important role in reducing risk for properties and communities (NIBS 2020). Residual markets could do more to encourage

these approaches. What measures to reward, how to design incentives, and how local governments would respond to them could be explored in future work.

Three additional areas for future research emerged that fall beyond the scope of this study. First, a more detailed analysis could be done to evaluate the impact of different types of mitigation approaches. Second, more granular insights into the types of policyholders accessing risk reduction measures through residual markets and their motivations for doing so could be helpful to understand the reach of these programs and any differential impacts. Finally, broader research on the factors influencing the growth of residual insurance programs over time and the role of mitigation measures in limiting that growth would be useful for evaluating loss reduction investments. Despite these open questions, our research highlights there are pathways and opportunities for residual markets to adopt risk mitigation and support residents in building resilience.

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APPENDIX: OVERVIEW OF RESIDUAL PROGRAMS

This table lists all the various residual insurance programs in the United States. This list includes all programs documented by PIPSO (2024 a, b), plus the newly created Colorado FAIR Plan and the California Earthquake Authority. Some of these programs offer full homeowners insurance policies that offer coverage from multiple types of losses. Other programs only provide disaster-specific coverage, such as only wind and hail coverage or only fire coverage (in this case, consumers would need to purchase an additional wraparound policy to cover all other sources of potential damage). Note that this table focuses only on the residential offerings of these programs and not commercial coverage availability. Some states have both a FAIR plan and a separate peril-specific program, such as California, which has both a FAIR plan and the California Earthquake Authority.

| Program | Year Established | Coverage Type | Geographic Scope | Policies in Force (2023) | Percent of households in coverage area with a policy | Exposure (2023, billions USD) |
|--|------------------|---------------------------|---|--------------------------|--|-------------------------------|
| Alabama Insurance Underwriting Association (AIUA) | 1970 | Wind/hail/hurricane only | Coastal counties (southern parts of Baldwin and Mobile counties) | 18,800 | 7.3% | \$7 |
| California Earthquake Authority (CEA) | 1996 | Earthquake | Statewide | 1,041,100 | 7.7% | \$664 |
| California FAIR | 1968 | Dwelling fire | Statewide | 320,500 | 2.4% | \$278 |
| Colorado FAIR Plan | 2024 | Dwelling fire | Statewide | No reported information | No reported information | No reported information |
| Connecticut FAIR | 1976 | Dwelling fire | Statewide | 1,300 | 0.1% | \$0.26 |
| Insurance Placement Facility of Delaware | 1968 | Dwelling fire | Statewide | 1,100 | 0.3% | \$0.21 |
| District of Columbia Property Insurance Facility | 1968 | Homeowners, dwelling fire | District-wide | 100 | <0.1% | \$0.51 |
| Florida Citizens Property Insurance Corporation (Citizens) | 2002 | Homeowners, dwelling fire | Statewide | 1,542,300 | 18.1% | \$553 |
| | | Wind-only | Wind-eligible area (based on location and age of structure) | | | |
| Georgia Underwriting Association (GUA) | 1970 | Homeowners, dwelling fire | Statewide | 9,100 | 0.2% | \$2 |
| | | Windstorm and Hail-only | Coastal counties (Bryan, Camden, Chatham, Glynn, Liberty, McIntosh) | | | |

| Program | Year Established | Coverage Type | Geographic Scope | Policies in Force (2023) | Percent of households in coverage area with a policy | Exposure (2023, billions USD) |
|--|------------------|--|------------------|--------------------------|--|-------------------------------|
| Hawaii Property Insurance Association | 1991 | Homeowners, dwelling fire | Statewide | 1,900 | 0.4% | \$0.74 |
| Illinois FAIR Plan Association | 1977 | Homeowners, dwelling fire, earthquake is available as optional endorsement | Statewide | 1,800 | <0.1% | \$0.30 |
| Indiana Basic Property Insurance | 1968 | Homeowners, dwelling fire, earthquake is available as optional endorsement | Statewide | 700 | <0.1% | \$0.11 |
| Iowa FAIR Plan Association | 1968 | Homeowners, dwelling fire | Statewide | 900 | 0.1% | \$0.05 |
| Kansas All-Industry Placement Facility | 2006 | Dwelling fire | Statewide | 11,800 | 1% | \$0.80 |
| Kentucky FAIR Plan Reinsurance Association | 1968 | Homeowners, dwelling fire, earthquake is available as optional endorsement | Statewide | 4,500 | 0.3% | \$0.20 |
| Louisiana Citizens Property Insurance Corporation (Louisiana Citizens) | 2003 | Homeowners, dwelling fire or wind-only available for monoline dwellings or commercial properties | Statewide | 184,100 | 10.1% | \$46 |
| Maryland Joint Insurance Association | 1968 | Homeowners, dwelling fire, earthquake is available as optional endorsement on dwelling policies | Statewide | 600 | <0.1% | \$0.24 |
| Massachusetts Property Insurance Underwriting Association (MPIUA) | 1968 | Homeowners, dwelling fire, earthquake is available as optional endorsement | Statewide | 194,500 | 7.1% | \$98 |
| Michigan Basic Property Insurance Association | 1968 | Homeowners, dwelling fire | Statewide | 15,700 | 0.4% | \$2 |
| Minnesota FAIR Plan | 1969 | Homeowners, dwelling fire | Statewide | 3,700 | 0.2% | \$0.45 |

| Program | Year Established | Coverage Type | Geographic Scope | Policies in Force (2023) | Percent of households in coverage area with a policy | Exposure (2023, billions USD) |
|---|------------------|---|---|--------------------------|--|-------------------------------|
| Mississippi Residential Property Insurance Underwriting Association | 2003 | Dwelling fire | Statewide | 2,500 | 0.2% | \$0.14 |
| Mississippi Windstorm Underwriting Association (MWUA) | 1987 | Windstorm and hail-only | Coastal counties (George, Hancock, Harrison, Jackson, Pearl River and Stone) | 13,700 | 7.1% | \$3 |
| Missouri Property Insurance Placement Facility | 1969 | Dwelling fire | Statewide | 2,000 | 0.1% | \$0.17 |
| New Jersey Insurance Underwriting Association | 1968 | Dwelling fire | Statewide | 7,200 | 0.2% | \$1 |
| New Mexico Property Insurance Program | 1969 | Dwelling fire | Statewide | 6,500 | 0.8% | \$0.92 |
| New York Property Insurance Underwriting Association | 1968 | Dwelling fire | Statewide | 20,600 | 0.3% | \$7 |
| North Carolina Insurance Underwriting Association (NCIUA) | 1969 | Dwelling fire | Beach area only (area generally referred to as the Outer Banks) | 254,200 | 60.9% | \$126 |
| | | Dwelling windstorm and fail, homeowner windstorm and hail | Beach and coastal areas (Beaufort, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Hyde, Jones, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington counties) | | | |
| North Carolina Joint Underwriting Association (NCJUA) | 1969 | Dwelling fire | Statewide except for area in NCIUA eligibility area | 227,700 | 5.5% | \$43 |
| Ohio FAIR Plan Underwriting Association | 1968 | Homeowners, dwelling fire, extended coverages available for windstorm or hail | Statewide | 14,100 | 0.2% | \$4 |
| Oregon FAIR Plan Association | 1968 | Dwelling fire | Statewide | 2,000 | 0.1% | \$0.50 |

| Program | Year Established | Coverage Type | Geographic Scope | Policies in Force (2023) | Percent of households in coverage area with a policy | Exposure (2023, billions USD) |
|--|------------------|--|--|--------------------------|--|-------------------------------|
| Insurance Placement Facility of Pennsylvania | 1968 | Dwelling fire, extended coverages available for windstorm or hail | Statewide | 9,700 | 0.2% | \$1 |
| Rhode Island Joint Reinsurance Association | 1968 | Homeowners, dwelling fire, earthquake and windstorm or hail coverage available as optional endorsement | Statewide | 13,500 | 3.1% | \$5 |
| South Carolina Wind and Hail Underwriting Association (SCWHUA) | 1988 | Windstorm and hail-only | Coastal counties (Beaufort, Colleton, Charleston, Georgetown, Horry) | 16,300 | 3.7% | \$7 |
| Texas FAIR Plan Association | 2002 | Homeowners, dwelling fire, windstorm or hail coverage available as optional endorsement | Statewide (except windstorm or hail endorsement is not available in TWIA eligible areas) | 79,400 | 0.8% | \$16 |
| Texas Windstorm Insurance Association (TWIA) | 1971 | Windstorm and hail-only | Fourteen coastal counties and a portion of Harris County on Galveston Bay | 257,100 | 36.3% | \$96 |
| Virginia Property Insurance Association | 1968 | Dwelling fire | Statewide | 21,700 | 0.7% | \$4 |
| Washington FAIR Plan | 1968 | Dwelling fire | Statewide | 200 | <0.1% | \$0.1 |
| West Virginia Essential Property Insurance Association | 1986 | Dwelling fire | Statewide | 200 | <0.1% | \$0.02 |
| Wisconsin Insurance Plan | 1970 | Homeowners, dwelling fire | Statewide | 4,100 | 0.2% | \$0.5 |

Source: PIPSO (2024 a, b), California Department of Insurance (n.d.) and individual program websites.

Note that for programs where homeowners' coverage is provided at the state level, but peril-specific coverage is provided at the sub-state level (e.g., Florida Citizens), the "Percent of households in coverage area with a policy" is based on the state-level total household count. For programs like the Texas FAIR Plan and TWIA and NCJUA and NCIUA, where there are mutually exclusive coverage areas, the "Percent of households in coverage area with a policy" is based on the distinct, non-overlapping geographic scopes. The total count of households used to calculate the percentage is sourced from the DP1_0132C data table from the 2020 Decennial Census. Note that for the AIUA program, the total household count is for both Mobile and Baldwin counties, even though eligibility only extends to residents located south of the 31st parallel. For the NCIUA program, the combined coastal and beach area is used to estimate the total number of households in the eligible area. For the TWIA program, only the fourteen coastal counties are used to calculate the percentage, as the portion of Harris County included in the TWIA area is only a fraction of the entire county.