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ADAPTATION POLICY IN PRACTICE *SERIES*

The *Strengthen Alabama Homes* Program: A State Model for Wind Mitigation Retrofits

By Joshua Saks

February 2026

Georgetown Climate Center's Adaptation Policy in Practice series spotlights the nation's most effective state-level climate adaptation initiatives, presenting practical analysis for leaders building comprehensive adaptation programs. Each brief examines not just what works, but how it works: the legislative foundations, funding mechanisms, community engagement strategies, and replication frameworks that transform successful state innovations into actionable blueprints.

Overview

When Hurricane Sally made landfall near Gulf Shores, Alabama in September 2020, the Category 2 storm's 105 mph winds tore roofs off homes across Mobile and Baldwin Counties. For thousands of families, the damage wasn't catastrophic enough to render their homes a total loss, but it was devastating enough to make them temporarily unlivable and expensive enough to strain household budgets already squeezed by rising insurance premiums.

Across the Gulf Coast, this cycle repeats itself. Wind damage from hurricanes represents a major climate risk for coastal homeowners.[1] Most homes remain vulnerable because homeowners lack resources to retrofit properly.[2] Alabama's response, the Strengthen Alabama Homes program, demonstrates how strategic state investment can break this cycle by providing upfront capital that enables homeowners to reduce risk, lower insurance costs, and help stabilize state insurance markets.

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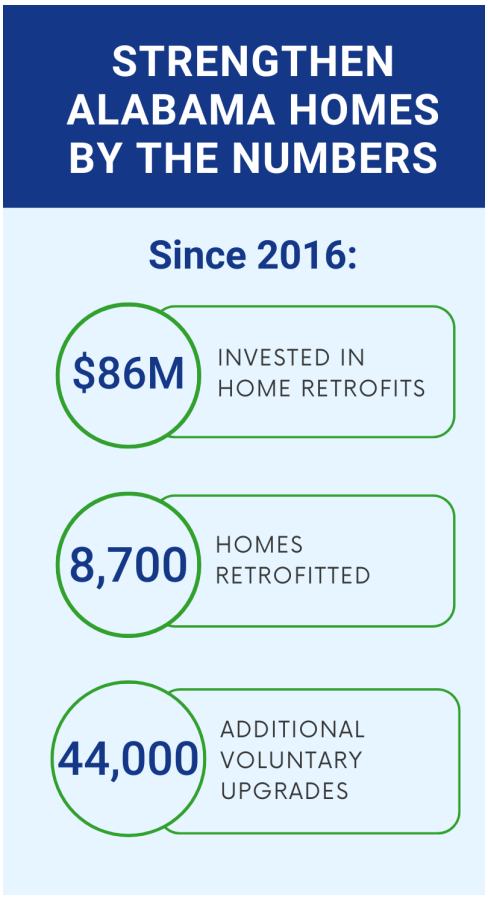
[1] *Expected Costs of Damage From Hurricane Winds and Storm-Related Flooding,* Congressional Budget Office (Apr. 2019) (estimating expected annual wind losses of $14 billion to residential sector), https://www.cbo.gov/publication/55019.

[2] Chase Parry & David Wessel, *What incentives are states offering to make houses less vulnerable to extreme weather damage?*, Brookings (Nov. 25, 2025), https://www.brookings.edu/articles/what-incentives-are-states-offering-to-make-houses-less-vulnerable-to-extreme-weather-damage/.

Administered by the Alabama Department of Insurance, the program funds home retrofits that meet the FORTIFIED standard. The standard was developed by the Insurance Institute for Business & Home Safety, an independent nonprofit scientific research organization supported by the property insurance industry. This nationally recognized standard strengthens homes against wind through sealed roof decks that prevent water intrusion, enhanced fasteners that secure roofs during high winds, and reinforced connections between roof and walls. These upgrades address the specific failure points that cause most wind damage.



Established by the legislation in 2011, Alabama finances the program through insurance industry licensing fees rather than general revenue, creating a sustainable funding stream that doesn't compete with other state budget priorities.[3] The state provides grants covering up to $10,000 per home, helping overcome the capital barrier that prevents many homeowners from investing in wind mitigation even when they understand the value.[4] State law requires insurance companies to offer premium discounts on wind coverage for retrofitted homes, with discounts ranging from 20-35 percent for FORTIFIED Roof (the level funded by most SAH grants) up to 60 percent for the highest certification levels.[5]

Since 2016, the program has invested $86 million to retrofit 8,700 homes, encouraging an additional 44,000 voluntary upgrades without grants.[6] Hurricane Sally demonstrated the approach works. Homes built to the standard sustained 73-76 percent fewer claims than those with conventional construction. Despite representing nearly one-quarter of insured homes in the storm's path, wind-resistant homes accounted for only 9 percent of claims.[7]

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[3] Ala. Code § 27-31E-4 (2011); Ala. Code § 27-4-2 (2011).

[4] *Strengthen Alabama Homes Program*, Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/

[5] Ala. Code § 27-31D-2 (2011); *Bulletin No. 2013*-07, Ala. Dept. of Insurance (Sept. 20, 2013), https://aldoi.gov/pdf/legal/2013-07-ModBulletins2010-03and2009-07.pdf.

[6] *Strengthen Alabama Homes Program Statistics*, Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[7] *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. Center for Risk and Insurance Research & Ala. Dept. of Insurance, (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

Background

The scale of coastal wind vulnerability

Alabama's two coastal counties, Mobile and Baldwin, are home to more than 500,000 residents and represent the state's fastest-growing region. Virtually every structure in those counties is susceptible to hurricane wind risk.

Most existing homes in Mobile and Baldwin counties were built to outdated or inadequately enforced building codes. Even homes built to modern standards often lack crucial structural connections and sealed roof systems that prevent wind and water intrusion during extreme weather. These deficiencies, although they don't pose a problem during normal weather, can prove catastrophic during hurricanes.

The insurance crisis

Wind damage creates financial loss for the insurance industry. Years of wind losses drove insurers out of Alabama's coastal market, turning physical risk into a financial crisis. Following Hurricanes Ivan (2004) and Katrina (2005), which caused $7.1 billion and $43.6 billion in insured losses respectively, major carriers restricted coverage in Alabama's coastal counties.[8] State Farm and Allstate, which together covered 41% of Alabama's homeowners market, stopped writing new policies in coastal areas, expanded hurricane deductible requirements, and in some cases dropped existing customers.[9] The crisis threatened the viability of Alabama's coastal insurance market and prompted state leaders to pursue mitigation as a long-term solution.[10]

Homeowners non-renewed by private insurers faced limited options. Alabama's insurer of last resort, the Alabama Insurance Underwriting Association, provides coverage but at substantially higher premiums than private market rates. For many coastal families, escalating insurance costs represent a significant financial burden that threatens affordability of homeownership.

The insurance industry's withdrawal reinforces itself. As insurers exit, remaining carriers face concentrated risk, driving further premium increases. Higher premiums strain household budgets, reducing homeowners' ability to invest in resilience upgrades. Without risk mitigation, homes remain vulnerable, generating losses that further reinforce insurers' decisions to abandon the market or raise rates.

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[8] *Hurricane Katrina: Insurance Losses and National Capacities for Financing Disaster Risks*, Insurance Services Office, cited in Congressional Research Service (Jan. 31, 2008), https://www.everycrsreport.com/reports/RL33086.html.

[9] *Ala. Coastal Property Owners Facing More Insurer Restrictions*, Insurance Journal (Oct. 10, 2006), https://www.insurancejournal.com/news/southeast/2006/10/10/73089.htm.

[10] *Alabama Leaders Celebrate 50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan.

Mitigation is cost prohibitive

The Insurance Institute for Business & Home Safety (IBHS), an independent nonprofit scientific research organization supported by the property insurance industry, developed the FORTIFIED standard based on testing conducted at its research facility in South Carolina.[11] At that facility, IBHS subjects full-scale homes to wind speeds up to 130 mph, wind-driven rain, and hail to identify common failure points during severe weather.[12] The FORTIFIED Home program establishes voluntary construction and re-roofing standards designed to strengthen homes against hurricanes, tornadoes, and other high-wind events, with all work verified by certified third-party evaluators.[13]

The improvements provide measurable protection and demonstrate clear financial returns. Properly retrofitted homes significantly reduce wind damage risk and qualify for insurance premium discounts of 20-60 percent under Alabama law. Research from the University of Alabama shows that FORTIFIED homes sell for approximately 7 percent more than comparable non-upgraded homes.[14]

It is difficult for many families to access the capital needed for these improvements. While some FORTIFIED roof projects cost as little as $1,000-$3,000 for a typical home, costs vary significantly by project scope and home conditions, and Alabama's $10,000 grant cap acknowledges that many retrofits exceed that amount.[7] Banks rarely finance wind mitigation work because it doesn't add square footage or conventional market value. Federal programs focus primarily on flood elevation, not wind retrofits. This means that even when a family understands their vulnerability, knows that effective solutions exist, and wants to take action, they may still lack the upfront capital to take the steps needed to protect their home.

Federal programs address flood but not wind

Federal disaster mitigation funding flows primarily toward flood risk while leaving windstorm vulnerability largely unaddressed. FEMA's Hazard Mitigation Grant Program (HMGP) and Building Resilient Infrastructure and Communities (BRIC) program both fund flood elevation, buyouts, and infrastructure projects. These programs have invested billions in reducing flood losses.

Federal funding for wind mitigation exists, but it operates far differently than flood mitigation in practice. FEMA's competitive Hazard Mitigation Assistance (HMA) programs can fund wind

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[11] *About*, Insurance Institute for Business & Home Safety, https://ibhs.org/about-ibhs/.

[12] *IBHS Research Center*, FORTIFIED, https://fortifiedhome.org/research/.

[13] *Strengthen Alabama Homes Program*, Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[14] *Strengthen Alabama Homes Program*, Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

retrofit projects, including roof strengthening to meet FORTIFIED standards.[15] These programs include wind retrofits among their pre-calculated benefit categories and allow states to apply for funding through competitive grant processes.[16]

However, unlike FEMA's flood mitigation programs, there is no dedicated federal funding stream for wind retrofits comparable to the Flood Mitigation Assistance program (FMA). FMA operates as a standalone program funded through National Flood Insurance Program premiums, with the Infrastructure Investment and Jobs Act appropriating $3.5 billion for FMA ($700 million annually for fiscal years 2022 through 2026).[17] Wind retrofits must instead compete for funding through FEMA's multi-hazard programs alongside projects addressing earthquakes, wildfires, and other disasters.[18]

Wind retrofits through federal HMA programs face barriers that flood mitigation does not. Projects compete nationally against all hazard types, generally require 25 percent non-federal cost share, and involve multi-year application cycles through state offices.[19] Additionally, the Benefit Cost Analysis process for residential wind retrofits can be tedious if required.[20]

The National Flood Insurance Program creates direct federal financial exposure through $1.4 trillion in coverage. That exposure, in turn, has provided a powerful incentive for the federal government to establish dedicated revenue streams for investment in flood loss reduction.[21] No equivalent federal wind insurance program exists to drive a parallel focus on wind mitigation. Alabama's approach addresses this gap by establishing a state-funded pathway that doesn't depend on winning competitive federal grants or securing non-federal matching funds.

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[15] *Cost*-Effectiveness *and Benefit-Cost Analysis Technical Assistance for Communities*, FEMA (Oct. 2023), https://www.fema.gov/sites/default/files/documents/fema_hma_bric-fma-benefit-cost-analysis_102023.pdf.

[16] *Wind Retrofit Guide for Residential Buildings,* FEMA (Dec. 2010), https://www.wbdg.org/FFC/DHS/fema_p_804.pdf.

[17] *Introduction to the National Flood Insurance Program (NFIP)*, CRS (Apr. 22, 2025) https://www.congress.gov/crs-product/R44593.

[18] *FEMA Hazard Mitigation: A First Step Toward Climate Adaptation*, CRS (Mar. 23, 2022), https://www.congress.gov/crs-product/R46989.

[19] *Hazard Mitigation Assistance Program and Policy Guide,* FEMA (last updated Sept. 22, 2023), https://www.caloes.ca.gov/wp-content/uploads/Recovery/Documents/FEMA-HMA-Guide-03.23.2023.pdf.

[20] Jadon W. Escarment, et al., *Wind Retrofit Guide for Residential Buildings (In Hurricane-Prone Regions)*, FEMA (Apr. 2023), https://www.researchgate.net/publication/382097300_Wind_Retrofit_Guide_for_Residential_Buildings.

[21] *Introduction to the National Flood Insurance Program (NFIP)*, CRS (Apr. 22, 2025) https://www.congress.gov/crs-product/R44593.

Opportunity for state leadership

The federal void in wind mitigation funding also represents an opportunity for state governments to lead on an adaptation challenge with clear solutions and measurable returns. Unlike many climate adaptation problems requiring complex infrastructure or coordination across jurisdictions, wind mitigation depends primarily on home-by-home improvements, so individual property owners are the ones making the critical decisions to retrofit. The primary weaknesses in home construction that lead to wind damage are matched by proven engineering solutions that work. States also possess two key advantages that position them to solve this capital access problem more effectively than the federal government.

First, state insurance regulators directly oversee the property insurance markets experiencing crisis. They understand insurance company behavior, can mandate premium discounts that ensure mitigation delivers returns to homeowners, and can design programs that stabilize markets by reducing insurers' loss exposure.

Second, instead of drawing on general revenue, states can fund wind mitigation through insurance industry fees, creating a sustainable financing mechanism that doesn't compete with other budget priorities.

Alabama's approach capitalizes on both these opportunities, and demonstrates how strategic state investment can transform both individual resilience and broader insurance market dynamics. Rather than waiting for federal leadership, Alabama has created a program that addresses the specific barriers preventing homeowners from strengthening their properties: lack of capital, uncertainty about mitigation effectiveness, and absence of a guaranteed financial return on their investment in their homes.

The program works because it provides grants for upfront costs, relies on proven technical standards, and ensures homeowners receive insurance discounts immediately after retrofitting.

Program design and implementation

Legislative foundation

Alabama established the policy framework for wind mitigation incentives in 2009, before creating the grant program itself. Alabama Code Title 27, Chapter 31D requires insurance companies to provide premium discounts on the wind portion of homeowners insurance for properties meeting IBHS FORTIFIED standards.[22]

[22] Ala. Code § 27-31D-1 et seq. (2009).

Insurers must submit actuarially justified rating plans to the Insurance Commissioner, who has established benchmark discount ranges varying by designation level and roof age.[23] Current benchmarks range from 20 percent to 60 percent discounts on wind premiums depending on certification level and geographic risk factors.[24]

Building on this insurance discount framework, in 2011 the Alabama Legislature established Strengthen Alabama Homes within the Alabama Department of Insurance and established the Strengthen Alabama Homes Fund in the State Treasury.[25] The legislation explicitly states that the program does not create entitlement or obligate the state to fund retrofits, making clear that grants depend on available funding.

The enabling statute directed the Department of Insurance to make grants available to homeowners for projects that strengthen homes against hurricane, tornado, or other catastrophic windstorm events. All mitigation work must comply with local building codes and the FORTIFIED Home standard developed by the IBHS. The program initially only served Alabama's two coastal counties, but in 2018, the Legislature expanded eligibility statewide in response to extensive tornado damage in central and northern Alabama.[26]

Funding mechanism

The legislature authorized Strengthen Alabama Homes in 2011, but the program did not begin awarding grants until 2016.[27] Initial funding came from insurance industry licensing fees approved by the legislature in 2015. House Bill 92, passed during the 2015 legislative session, increased certain insurance licensing fees and appropriated funds to the Strengthen Alabama Homes Fund for fiscal year 2016. This funding structure meant the program operated from industry fees rather than state general revenue, but remained subject to annual legislative appropriations.

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[23] Ala. Code § 27-31D-2(g) ("Insurers required to submit rates and rating plans to the commissioner shall submit actuarially justified rating plans").

[24] *Bulletin No. 2016-07*, Ala. Dept. of Insurance (Oct. 31, 2016) https://aldoi.gov/pdf/legal/2016-07%20-%20modification%20to%20ala.%20bulletins%202013-07,%202010-03%20and2009-07.pdf (establishing benchmark discounts of 35-60% on hurricane portion and 20-35% on other wind portion of premiums); *see also* Amy O'Connor, *Alabama Establishes New Mitigation Discounts for IBHS Fortified Structures*, Insurance Journal (Dec. 29, 2016), https://www.insurancejournal.com/news/southeast/2016/12/29/436754.htm.

[25] Ala. Code § 27-31E-2 (2011) (enacted through Act 2011-643).

[26] *Alabama Department of Insurance Approves Changes to the Strengthen Alabama Homes Program Regulations Supported by Alabama REALTORS*, Ala. Assoc. of REALTORS (Nov. 8, 2018), https://www.alabamarealtors.com/posts/2018/11/08/alabama-department-of-insurance-approves-changes-to-the-strengthen-alabama-homes-program-regulations-supported-by-alabama-realtors (amending Insurance Regulation No. 159, effective Nov. 17, 2018).

[27] *Alabama Leads the Nation in FORTIFIED Construction*, Coastal Ala. Partnership (Nov. 20, 2015), http://coastalalabama.org/alabama-leads-the-nation-in-fortified-construction/ ("House Bill 92 funded the Strengthen Alabama Homes program"); Ala. HB 92 (2015) (increasing licensing fees and appropriating funds to Strengthen Alabama Homes Fund for fiscal year 2016).

The annual appropriations structure created uncertainty about program continuity. Each year, the legislature had to decide whether to appropriate funds to the program. Grant availability fluctuated based on annual funding decisions.

The original statutory framework identified multiple funding sources, including federal grants alongside state appropriations.[28] Alabama initially explored coordination with FEMA's Hazard Mitigation Grant Program, which becomes available following presidential disaster declarations.[29] However, the HMGP structure proved difficult to navigate. HMGP generally requires a 25 percent nonfederal match, operates on a reimbursement basis requiring homeowners to pay contractors upfront, and involves lengthy federal review processes.[30] Alabama instead developed a standalone state-funded program, though it remained subject to annual legislative appropriations through 2022.

Act 2022-147 changed this structure by authorizing the Commissioner of Insurance to transfer funds from the Insurance Department Fund to the Strengthen Alabama Homes Fund, up to 50 percent of the Insurance Department Fund appropriation each fiscal year.[31] The Insurance Department Fund itself is capitalized by insurance industry licensing fees. This replaced the program's previous reliance on year-to-year legislative appropriations and provided more stable funding.

This funding structure creates several advantages. The program does not compete with education, healthcare, or other state budget priorities during appropriations cycles. Revenue scales with insurance industry activity in the state. The model establishes a direct link between the industry that bears financial risk from wind losses and the program designed to reduce those losses.

Individual grants cover up to $10,000 per home for wind mitigation work meeting the FORTIFIED standard. If retrofit costs exceed the grant amount, homeowners pay the difference. The program operates as a direct grant rather than a reimbursement program, which means homeowners do not need to pay contractors upfront and seek reimbursement later. The state pays grant amounts directly to contractors upon completion and third-party verification of the work.

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[28] Ala. Code § 27-31E-2(c) (2016).

[29] *FEMA HMGP DR-4082 and Launch of the Strengthen Alabama Homes Program*, Ala. Dept. of Insurance (last updated Aug. 25, 2016), https://strengthenalabamahomes.com/Home/HMGP.

[30] *Hazard Mitigation Grant Program (HMPG),* FEMA (last updated Sept. 12, 2025), https://www.fema.gov/grants/mitigation/learn/hazard-mitigation (HMGP "can fund up to 75 percent of the eligible costs of each project"); *Property Owners and the Hazard Mitigation Grant Program*, FEMA (last updated Sept. 11, 2024), https://www.fema.gov/grants/mitigation/learn/hazard-mitigation/property-owners ("FEMA will reimburse you only after the approved work has been completed").

[31] Ala. Code § 27-31E-4 (2024).

Program architecture and application process

Strengthen Alabama Homes provides grant support to owners of existing, owner-occupied, single-family homes in eligible Alabama counties. The program does not cover rental properties, condominiums, townhomes, or mobile homes. Homes cannot be listed for sale during the application and retrofit process. Applicants must maintain active homeowners insurance policies with wind coverage, and flood insurance if the property sits in a Special Flood Hazard Area.[32]

The program operates through quarterly application windows that open on the first business day of each quarter. Grants are awarded on a first-come, first-served basis. Demand regularly exceeds available funding. Grants have been fully subscribed in as little as eight minutes after application windows open.[33]

The application process requires multiple steps designed to ensure the funded upgrades are executed well while keeping the program accessible to as many homeowners as possible. Each applicant creates an online profile and submits documentation including the previous year's federal tax return for identity verification and current homeowners insurance declaration pages showing active wind coverage (and flood coverage if the property is in a Special Flood Hazard Area).[34] The program does not use income as an eligibility criterion. If approved, the homeowner selects a certified evaluator from an approved list.[35]

Certified evaluators conduct detailed inspections to determine if homes can achieve the FORTIFIED designation through retrofitting.[36] The evaluation is pass/fail and remains valid for five years. Homeowners pay evaluation costs directly, typically $500 to $1,000 depending on the evaluator and certification level. This is the homeowner's only out of pocket cost.[37]

If a home passes evaluation, the evaluator determines specific work needed. Homeowners then select three contractors from the program's list of approved, trained contractors to provide competitive bids. The program requires three bids to prevent price gouging while ensuring fair pricing.

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[32] *Strengthen Alabama Homes Program*, Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[33] Carly Berlin, *An Alabama program helps residents* stormproof *their homes. Louisiana wants to copy it*, WBHM (May 24, 2023), https://wbhm.org/2023/an-alabama-program-helps-residents-stormproof-their-homes-louisiana-wants-to-copy-it/.

[34] *Application Process,* Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[35] *Application Process,* Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/ ("This is not an income-based grant").

[36] *Application Process,* Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[37] *Application Process,* Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

After receiving three bids, the Department of Insurance reviews the full application and notifies the homeowner of the approved grant amount and any out-of-pocket costs exceeding the $10,000 maximum. The homeowner selects a contractor. All contracts are between the contractor and homeowner, but the program pays the grant amount directly to the contractor upon completion and verification.

When contractors complete the work, certified evaluators verify that all specifications have been met and the home qualifies for official designation from IBHS. Only after verification does the Department of Insurance release grant payment. The program also conducts random reinspections of completed projects from time to time to reinforce accountability.[38]

Technical standards and quality control

Rather than creating state-specific mitigation requirements, Alabama adopted IBHS's FORTIFIED standard. This combination outsources both technical development and quality control to existing institutions rather than building parallel state capacity.

By outsourcing the contracting and inspection functions, the program builds institutional capacity in the private sector rather than within state agencies. The program created what a 2025 University of Alabama study described as "a critical mass of contractors, evaluators, and inspectors" trained in FORTIFIED specifications. By late 2024, Alabama had certified more than 50,000 FORTIFIED homes, with SAH grants directly funding 8,700 of those retrofits since 2016. The remaining 41,000-plus homes represent private market adoption by contractors and homeowners. This expertise persists independent of program funding levels and serves all homeowners pursuing upgrades, whether or not they receive grant funding.[39]

The IBHS standard offers three progressive levels of protection. The Roof level requires a sealed roof deck to prevent water intrusion, enhanced fasteners for roof deck attachment, reinforced roof edges, and tested roof vents that resist wind-driven rain. The Silver level adds impact-rated doors and windows, enhanced soffit attachment, gable end bracing, and anchored chimneys. The Gold level includes designed pressure-rated openings, impact-resistant wall sheathing, and a continuous load path connecting roof to walls to foundation.

The Hurricane Sally study revealed the value of third-party verification beyond the technical specifications themselves. Homes built to building codes identical to the FORTIFIED standard but inspected only by municipal code officials performed approximately 50 percent worse for roof-level retrofits. The only difference was the inspection process, suggesting that rigorous third-party verification adds significant value that standard code enforcement may not deliver.[40]

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[38] Ala. Ins. Reg. 482-1-159 § -.02(4)(b)-(c), (f) (2015), https://aldoi.gov/pdf/legal/SAH.pdf.

[39] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

[40] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

Figure 1: FORTIFIED Levels

FORTIFIED ROOF	**FORTIFIED Roof** Strengthens the roof system and minimizes the chances of water entering your home.
FORTIFIED SILVER	**FORTIFIED Silver** Strengthens the roof, windows, doors and other vulnerable areas of your home to prevent wind and rain from causing serious damage.
FORTIFIED GOLD	**FORTIFIED Gold** All the added strength of FORTIFIED Roof and Silver, plus a continuous load path to provide maximum protection from wind.

Source: 2025 FORTIFIED Home Standards[41]

Program scale and administration

As of late 2024, Alabama leads the nation with more than 53,000 homes certified to the FORTIFIED standard statewide. The Strengthen Alabama Homes program directly funded approximately 8,700 of these through $86 million in grants since 2016.[42]

In Alabama's two coastal counties, FORTIFIED homes represent approximately 20 percent of all single-family homes, the highest concentration anywhere in the United States.[43] In addition, over 1,200 inland homes in Birmingham, Tuscaloosa, and Huntsville, where tornadoes are the primary wind-damage threat, have also met the upgraded standard.[44] In the past few years, about half of current grant applications have come from coastal homeowners facing hurricane

[41] FORTIFIED Home Standards (2025). https://fortifiedhome.org/incentives-alabama/

[42] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

[43] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

[44] *Alabama Leaders Celebrate 50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan.

risk, with the other half from inland residents seeking protection from tornadoes.[45] The Alabama Department of Insurance manages the program with existing staff rather than creating a separate agency or substantial new bureaucracy. This efficiency keeps administrative costs low relative to total program investment.

Figure 2: FORTIFIED Homes on Alabama's Coast

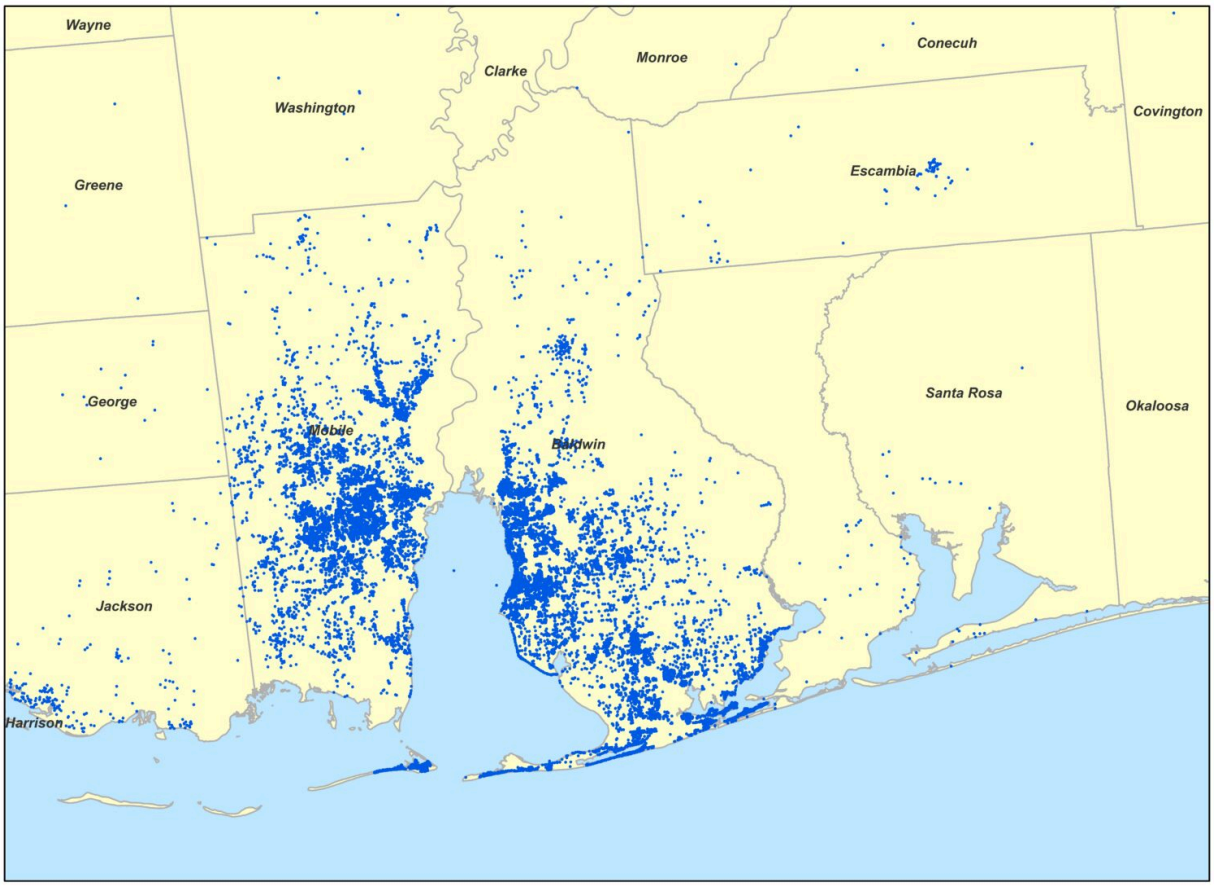

Image credit: Birmingham Watch[46]

[45] Carly Berlin, *An Alabama program helps residents stormproof their homes. Louisiana wants to copy it*, WBHM (May 24, 2023), https://wbhm.org/2023/an-alabama-program-helps-residents-stormproof-their-homes-louisiana-wants-to-copy-it/.

[46] *Id.*

Program impact and outcomes

The Hurricane Sally test

Hurricane Sally made landfall near Gulf Shores, Alabama on September 16, 2020 as a strong Category 2 storm with maximum sustained winds of 105 mph. The storm provided the first real-world test of wind-resistant construction at scale. By September 2020, Alabama's coastal counties contained more than 16,000 retrofitted homes, enough to enable meaningful statistical comparison between upgraded and conventional construction under identical storm conditions.[47]

Sally moved slowly across coastal Alabama, subjecting homes to sustained hurricane-force winds and heavy rainfall for extended periods. Peak wind gusts exceeded 100 mph in some locations. The storm also dropped over 20 inches of rain in parts of Baldwin County.

The performance difference was immediately visible. Of the 17,000 FORTIFIED homes in coastal Alabama when Sally struck, more than 95% sustained little to no damage.[48] The University of Alabama's peer-reviewed study of Hurricane Sally found FORTIFIED homes reduced claim frequency by 55% to 74% compared to conventional construction.[49] Post-storm damage assessments revealed stark contrasts between adjacent neighborhoods.

Hurricane Sally and Strengthen Alabama Homes

- More than 95% of the 17,000 FORTIFIED homes in coastal Alabama sustained little to no damage during the hurricane.
- Homes built to the FORTIFIED standard sustained up to 76% less claims than conventional homes.
- Wind-resistant homes accounted for only 9% of claims, even though they represented nearly a quarter of insured homes in Sally's path.

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[47] Daniel Cusick, *Hurricane-Resistant Building Code Helped Protect Alabama from Sally's Winds,* Scientific American (Oct. 5, 2020), https://www.scientificamerican.com/article/hurricane-resistant-building-code-helped-protect-alabama-from-sallys-winds/.

[48] *Alabama Leaders* Celebrate *50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan.

[49] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

Figure 3: The FORTIFIED Difference

Side-by-side comparison of roofs without vs with FORTIFIED certification. Image credit: FORTIFIED.[50]

Quantifying performance

To provide definitive empirical evidence, the Alabama Department of Insurance issued a data call in 2024 requiring all insurers providing residential property coverage south of Interstate 10 to submit detailed policy and claims data from Hurricane Sally. Eighty-six insurance companies responded, providing information on more than 40,000 insured properties with a total insured value exceeding $17 billion.[51]The University of Alabama's Center for Risk and Insurance Research analyzed this data in collaboration with the Alabama Department of Insurance, producing a peer-reviewed study released in May 2025. The analysis compared wind-resistant homes to conventional construction across multiple performance metrics: claim frequency, claim severity, and loss ratios.[52]

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[50] *Reinforce Your Property Against Hurricanes - FORTIFIED - A Program of IBHS. 2025.* https://fortifiedhome.org/article/reinforce-your-property-against-hurricanes/

[51] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

[52] *Id.*

The results demonstrated that upgraded construction substantially outperformed conventional homes. Using the most rigorous analytical method, comparing each retrofitted home to the nearest conventional home within a quarter mile to control for identical wind and rain exposure, and excluding tree-fall claims to isolate performance of wind mitigation features, Roof-level homes showed 73 percent lower claim frequency, 15 percent lower claim severity, and 72 percent lower loss ratios compared to conventional construction. Gold-level homes performed even better with 76 percent lower claim frequency, 24 percent lower claim severity, and 67 percent lower loss ratios.[53]

Retrofitting saves homeowners time and money

These reductions translated into significant aggregate savings. Despite representing almost one-quarter of the policies in the study area, wind-resistant homes accounted for only 9 percent of claims. If every conventional home in the sample had been built or retrofitted to Roof-level standards, the study estimated insurers would have saved $99.9 million in losses. Homeowners would have saved $32.6 million in deductibles they otherwise paid. If all homes had been built to Gold standards, total savings would have reached $146.4 million.[54]

Image credit: Live HealthSmart Alabama[55]

[53] *Id.*

[54] *Id.*

[55] Summer Bowman, (2024). "Strengthen Alabama Homes Brings FORTIFIED Roofs to Selma Community." Live HealthSmart Alabama, University of Alabama Birmingham. 2024. https://www.uab.edu/livehealthsmartal/news-events/live-healthsmart-al-news/strengthen-alabama-homes-brings-fortified-roofs-to-selma-community.

Community-scale resilience

Alabama officials frame program success not primarily in terms of individual home protection but in terms of improvements in community resilience and recovery speed. The Insurance Commissioner emphasizes that upgraded construction has reduced the prevalence of blue tarps on homes after storms and enabled communities to resume normal life more quickly.

During Hurricane Sally, over 95 percent of the 17,000 coastal wind-resistant homes saw little or no damage, reducing the number of families needing acute post-disaster housing assistance, and allowing resources to flow more quickly to more badly damaged communities.[56] Faster recovery delivers economic benefits that extend beyond avoided repair costs. When homes remain habitable, residents continue working, students attend school without interruption, local businesses retain customers and employees, and the tax base remains stable.

National recognition and interstate replication

Alabama's approach has attracted national attention as other states confront similar challenges with escalating wind risk and unstable insurance markets. At least six states have developed or are developing grant programs modeled on Strengthen Alabama Homes.[57]

Louisiana launched its Fortify Homes Program in 2022, offering $10,000 grants structured similarly to Alabama's.[58] North Carolina has also established a grant program targeting wind resistance retrofits.[59]

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[56] *Alabama Leaders Celebrate 50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan.

[57] *Alabama Leaders Celebrate 50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan ("North Carolina, Louisiana, Minnesota, Mississippi, Kentucky, and Oklahoma are developing or have grant programs that mirror what has proven effective in Alabama").

[58] La. Stat. Ann. § 22:1483.1 (2022) (establishing the Louisiana Fortify Homes Program with up to $10,000 grants, effective January 1, 2023); *Louisiana,* Smart Home America, https://www.smarthomeamerica.org/resources/louisiana.

[59] *Strengthen Your Roof*, N.C. Insurance Underwriting Association, https://www.strengthenyourroof.com/Home/Policyholders (grant program launched 2019 and expanded 2025, providing grants up to $10,000 for FORTIFIED Roof upgrades in coastal areas); *Commissioner Causey, state,* local *leaders announce $20 million grant program to strengthen coastal roofs*, N.C. Dept. of Insurance (July 17, 2025), https://www.ncdoi.gov/news/press-releases/2025/07/17/commissioner-causey-state-local-leaders-announce-20-million-grant-program-strengthen-coastal-roofs.

In 2025, Alabama Insurance Commissioner Fowler testified before the California Legislature in support of the California Safe Homes Act, proposed legislation that would apply a similar model to address the threat of wildfire, funding homeowner grants for fire-safe roofing upgrades and defensible space improvements.[60]

What makes Strengthen Alabama Homes distinctive

Strengthen Alabama Homes succeeds not through any single innovation but through an integrated system of policy design choices that align incentives across homeowners, insurers, contractors, and state government.

Industry-funded model that stabilizes markets

The program is funded by increased licensing fees on insurers doing business in Alabama rather than taxpayer money or general revenue. This creates a closed-loop system where the industry experiencing losses pays for hazard mitigation that reduces their claims exposure. The innovation extends beyond the funding source to what it achieves: comprehensive market transformation that rescued a collapsing insurance market and stabilized it while neighboring states' markets deteriorated.

Statutory insurance discount requirements with guaranteed return on investment

Alabama law requires insurers to provide discounts ranging from 20 percent to 60 percent on wind premiums for upgraded homes. This mandatory discount requirement, in contrast to many others that rely on voluntary industry participation, distinguishes Alabama's approach and ensures participation delivers a measurable financial benefit to homeowners. The statutory requirement transforms mitigation from an uncertain hedge against potential losses in a future storm into calculable investment with a predictable payback period.

Combined with research showing retrofitted homes sell for 7 percent more on average, the mandatory discounts enable homeowners to determine precise return on investment before committing to upgrades.

The discounts also create market pressure that reinforces program goals. Insurers benefit from reduced claims on wind-resistant homes, justifying the premium reductions. Homeowners see immediate premium savings that help finance retrofit costs. The alignment of financial incentives across parties sustains program momentum beyond what grant funding alone could achieve.

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[60] *California leaders introduce innovative 'California Safe Homes Act' to tackle wildfire and insurance crises*, Cal. Dept. of Insurance, press release (April 30, 2025), https://www.insurance.ca.gov/0400-news/0100-press-releases/2025/release036-2025.cfm.

Third-party technical standard with quality control infrastructure

Rather than creating state mitigation specifications, Alabama adopted the Insurance Institute for Business & Home Safety's proven standard with independent evaluator certification. This decision outsources both technical development and quality control to existing institutional infrastructure rather than building parallel state capacity.

The program's quality control process follows a specific sequence. First, certified evaluators conduct initial inspections to determine whether homes can achieve FORTIFIED certification through retrofitting. This pass/fail evaluation establishes eligibility and identifies required work. Homeowners then obtain three competitive bids from pre-approved contractors. After contractors complete the work, evaluators return to verify that all specifications have been met before submitting documentation to IBHS for official certification.[61]

The structure builds institutional capacity in the private sector rather than within state agencies. Hundreds of contractors have obtained training in FORTIFIED specifications. Dozens of professionals have earned evaluator certification. This pool of expertise persists regardless of program funding levels and is available to all homeowners, even if they pursue upgrades without assistance from Strengthen Alabama Homes.

The Hurricane Sally study revealed the value of third-party verification beyond the technical specifications themselves. Homes certified through independent evaluators performed 50 percent better than homes built to identical code requirements.[62]

Expansion from coastal to statewide mitigation

Originally established to address coastal hurricane vulnerability in Mobile and Baldwin Counties, the program expanded statewide by 2018 to address tornado damage in central and northern Alabama.[63] Over 1,200 inland homes in Birmingham, Tuscaloosa, and Huntsville now have the FORTIFIED designation.[64] About half of current grants now go to inland communities facing tornado risk rather than coastal hurricane exposure.[65]

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[61] *Application Process,* Ala. Dept. of Insurance, https://www.strengthenalabamahomes.com/.

[62] Lars Powell, *Performance of IBHS FORTIFIED Home Construction in Hurricane Sally*, U. of Ala. & Ala. Dept. of Insurance (May 5, 2025), https://aldoi.gov/pdf/news/performanceibhsfortifiedhomeconstructionhurricanesally.pdf.

[63] *Alabama Department of Insurance Approves Changes to the Strengthen Alabama Homes Program Regulations Supported by Alabama REALTORS*, Ala. Assoc. of REALTORS (Nov. 8, 2018), https://www.alabamarealtors.com/posts/2018/11/08/alabama-department-of-insurance-approves-changes-to-the-strengthen-alabama-homes-program-regulations-supported-by-alabama-realtors.

[64] *Alabama Leaders Celebrate 50,000 FORTIFIED Homes 20 Years After Hurricane Ivan*, Smart Home America (2024), https://www.smarthomeamerica.org/news/alabama-leaders-celebrate-50-000-fortified-homes-20-years-after-hurricane-ivan.

[65] Carly Berlin, *An Alabama program helps residents stormproof their homes. Louisiana wants to copy it*, WBHM (May 24, 2023),

This evolution demonstrates the FORTIFIED standard's applicability beyond coastal wind and positions the program as comprehensive severe weather mitigation rather than narrowly targeted hurricane response. The expansion also broadened political support beyond coastal legislators to include representatives from tornado-prone regions across the state.

Lessons for other states

Understanding legislative vs. regulatory authority

State officials considering wind mitigation programs should understand which elements of Alabama's approach required new statutory authority and which could proceed through existing regulatory powers.

Insurance commissioners typically already possess authority to adopt technical standards like FORTIFIED, approve voluntary insurer discount programs through rate review processes, and establish contractor certification requirements through administrative rulemaking. In most states, these regulatory actions can advance wind mitigation without legislative involvement.

However, some core components of Strengthen Alabama Homes had to be established through new legislation. Mandatory insurance discounts, the mechanism for directing licensing fees to the program, and program establishment all required statutory authority. Insurance commissioners generally lack power to mandate rate structures, redirect existing fee revenue to new purposes, or create grant programs without legislative direction.

This distinction matters because voluntary approaches lack certainty that drives homeowner investment. Alabama succeeds because state law guarantees premium reductions and sustainable funding. Regulators can take initial steps, but the program's effectiveness depends on statutory requirements for insurance discounts and dedicated funding.

The following recommendations reflect this understanding.

Recommendation 1: Fund wind mitigation through dedicated revenue streams

States should explore opportunities to finance wind mitigation programs through insurance industry licensing fees or assessments rather than competing for general fund appropriations. This approach creates a sustainable revenue stream that doesn't require annual legislative debate and establishes direct alignment between the industry experiencing losses and the program reducing those losses.

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https://wbhm.org/2023/an-alabama-program-helps-residents-stormproof-their-homes-louisiana-wants-to-copy-it/.

Alabama's funding mechanism scales with insurance market activity and insulates the program from budget pressures affecting education, healthcare, and other state priorities. States can also take steps to authorize insurance commissioners to transfer a percentage of insurance department revenues to mitigation funds, as Alabama does with up to 50 percent of its Insurance Department Fund.

Recommendation 2: Mandate insurance discounts by statute to ensure guaranteed returns

States should require insurers to provide specific premium discounts for wind mitigation rather than relying on voluntary industry participation. Statutory discount requirements transform mitigation from uncertain cost into calculable investment with known payback periods.

Alabama's approach mandates discounts of 20-60 percent on wind premiums depending on mitigation level and roof age, with these serving as minimum requirements that insurers may exceed. This certainty enables homeowners to determine precise return on investment before committing to retrofits, removing the speculation that prevents adoption even when homeowners understand risks. The mandatory structure also creates a mutually reinforcing set of conditions, where insurers benefit from reduced claims while homeowners see immediate premium savings.

Recommendation 3: Adopt proven technical standards rather than creating state specifications

States should strongly consider adopting existing, validated technical standards rather than developing proprietary state mitigation requirements. This approach outsources both technical development and quality control to established institutional infrastructure and expertise, leveraging decades of research and full-scale testing rather than pursuing an expensive effort to build parallel state capacity. Using proven standards also ensures quality through third-party certification processes that exceed typical building code enforcement. Alabama's experience demonstrates the value of this approach. Homes certified through independent evaluators performed 50 percent better than homes built to identical code requirements but inspected only by local officials. States benefit from existing contractor training programs, evaluator certification systems, and ongoing standard refinement based on real-world storm performance.

Recommendation 4: Use direct grants, not reimbursement programs

For homeowners, the principal barrier to upgrading their homes against wind damage is lack of accessible capital. Wind mitigation programs can largely overcome this obstacle by paying contractors directly upon completion rather than requiring homeowners to pay up front and seek reimbursement. Many homeowners do not have access to the available capital to make needed retrofits. Reimbursement programs perpetuate this barrier by requiring homeowners to foot the bill for the work themselves before being reimbursed.

Alabama's structure allows homeowners to contract directly with approved contractors while the state pays grant amounts directly to contractors after third-party verification of completed work. This approach removes the upfront capital requirement while maintaining quality control and accountability. The only out-of-pocket cost for homeowners is the evaluator inspection fee (typically $500-$1,000), making participation feasible for families who lack discretionary savings but could benefit substantially from mitigation.

Conclusion

Alabama's approach to wind mitigation demonstrates that when they align incentives across homeowners, insurers, and construction markets, states can solve adaptation challenges the federal government doesn't fully address. By funding grants through insurance industry fees rather than general revenue, mandating premium discounts that guarantee returns, and adopting proven technical standards with rigorous third-party verification, Alabama transformed wind mitigation from abstract policy goal into self-sustaining market practice.

The program's significance extends beyond the 53,000 homes now built to FORTIFIED standards. Alabama rescued a collapsing coastal insurance market and proved through Hurricane Sally data that upgraded construction delivers the promised performance reductions. Multiple states now replicate the model, validating the approach while creating opportunities for interstate learning as programs mature.

As climate change intensifies hurricane risks, wind mitigation becomes increasingly urgent for coastal and inland communities. Alabama's experience provides a replicable framework for states ready to strengthen homes, stabilize insurance markets, and build community resilience against intensifying wind risks.

About this series

Authored by Joshua Saks, Adaptation Program Director

This brief is part of the Georgetown Climate Center's *Adaptation Policy in Practice* series.

As climate-driven disasters grow more frequent and severe, states are stepping up to protect their communities through innovative adaptation programs that deliver measurable results. This series spotlights some of the most effective state-level climate adaptation initiatives.

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Acknowledgements

We are deeply grateful to Brian Powell, Catastrophe Risk Mitigation Advisor at the National Association of Insurance Commissioners for providing additional context and insights into the Strengthen Alabama Homes program and its long arc from an initial idea to a program that is routinely replicated across the U.S.

Additional thanks to GCC staff: Pete Rafle and Kate Zyla for their editing and thoughtful questions; Caren Fitzgerald for her formatting, editing, and graphic design; Marisa Borregine for liaising with experts, editorial review and comment, and engaging stakeholders; Sidney Lee, for formatting and citations; and Annie Bennett for her invaluable comments and suggestions.