



BUILDING THE FUTURE OF RESILIENCE

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Chief Engineer

Insurance Institute of Business & Home Safety





WHY?

Severe weather disrupts lives, displaces families, and drives financial loss. IBHS delivers top-tier science and translates it into action so we can prevent avoidable suffering, strengthen our homes and businesses, inform the insurance industry and support thriving communities.





Severe Convective Storm Hazards and Loss

Loss by SCS Hazard from Risk Management Solutions



Hail

Hail accounts for 70% of annual average loss. In any given year hail is 60-80% of the damage produced by severe convective storms



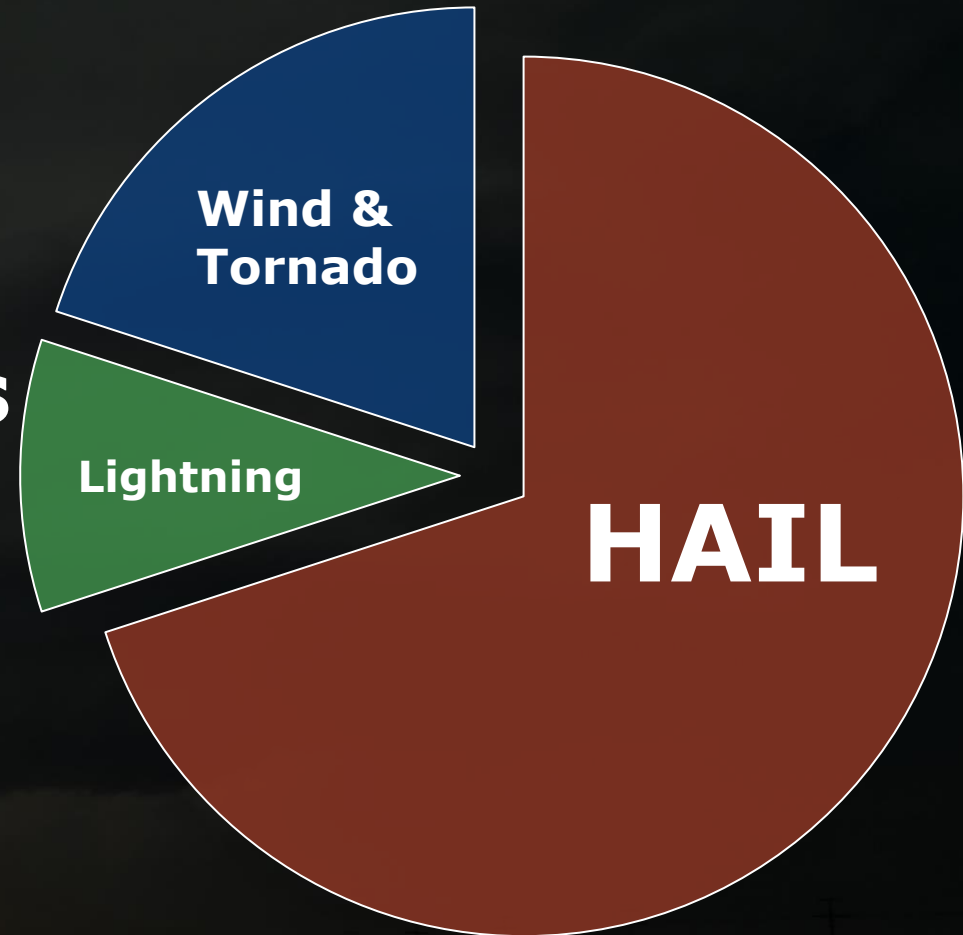
Wind & Tornadoes

Severe winds both from straight-line wind events and tornadoes account for about 20% of average annual loss.



Lightning

Lightning, including fires started by lightning accounts for about 10%





Tears



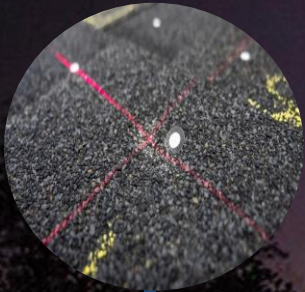
Dents



Granule Loss



IBHS Hail Research Path



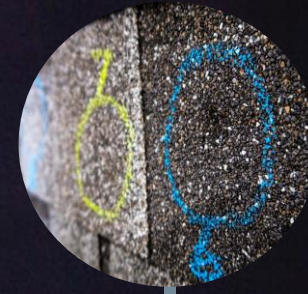
**Evaluate
existing test
standards**



**Collect Field
Measurements**











































**Recreate
Realistic
Laboratory
Hail**



**Establish
New Test
Protocol and
Ratings**



ROOF SHINGLE HAIL IMPACT RATINGS

Manufacturer/ Brand	Overall Rating	Dents/ Ridges	Tears	Granule Loss
 StormMaster® Shake				
 Roofing NorthGate®				
 Roofing Products Legacy®				
 Roofing Products Vista®				
 Timberline® ArmorShield™ II				
 TruDefinition® WeatherGuard® HP				
 Roofing Landmark® IR				
 Cambridge™ IR				

Key  Excellent  Good  Marginal  Poor




Frequent **SMALL HAIL**
contributes to the
CUMULATIVE IMPACT
of hailstorms on roofs



**Small Hail, Big Problems,
New Approach**

WHAT WE LEARNED FROM THE FIELD, THE LAB, AND
DECADES OF PROPERTY DATA

Anne Cope, PhD
Ian Giammanco, PhD
Charles Lau
Brenna Meisenzahl
Peter Osnes
Bryn Ronalds, PhD



IBHS RESEARCH

**IMPACT TESTING OF HIGH
CONCENTRATIONS OF SMALL HAIL**

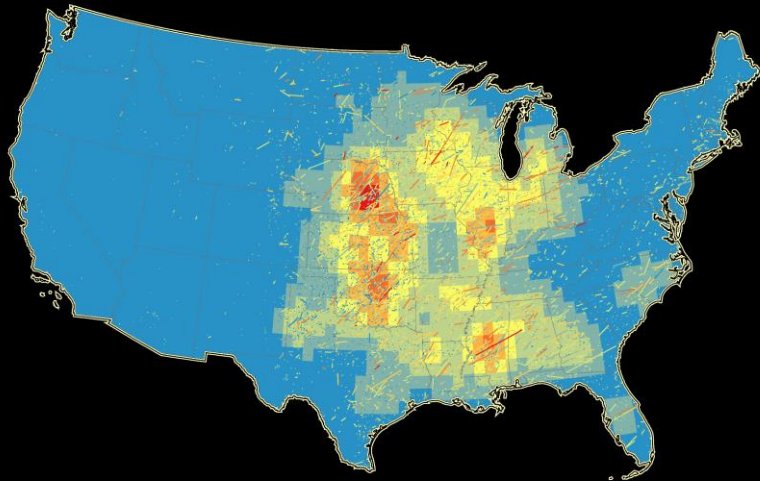
IBHS RESEARCH REPORT
MEMBERS ONLY
JULY 2021

BRENN A. MEISENZAHL
TANYA M. BROWN-GIAMMANCO, PHD
IAN M. GIAMMANCO, PHD
FARAZ HEDAYATI, PHD

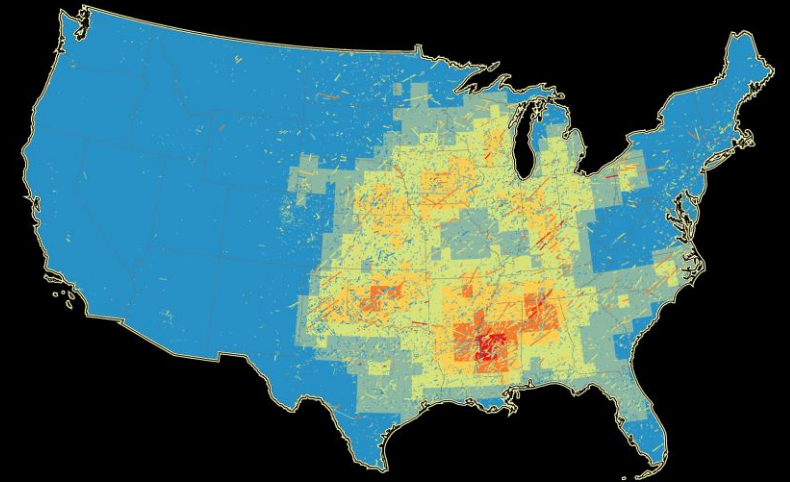
Tornadoes...



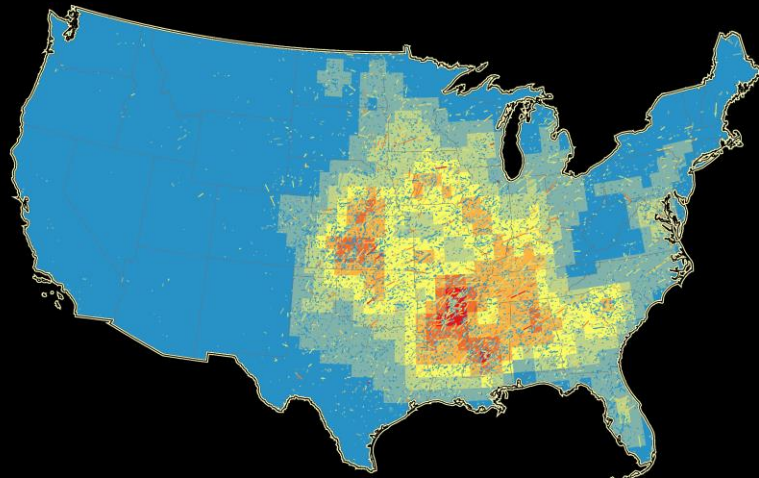
Tornado Track Density



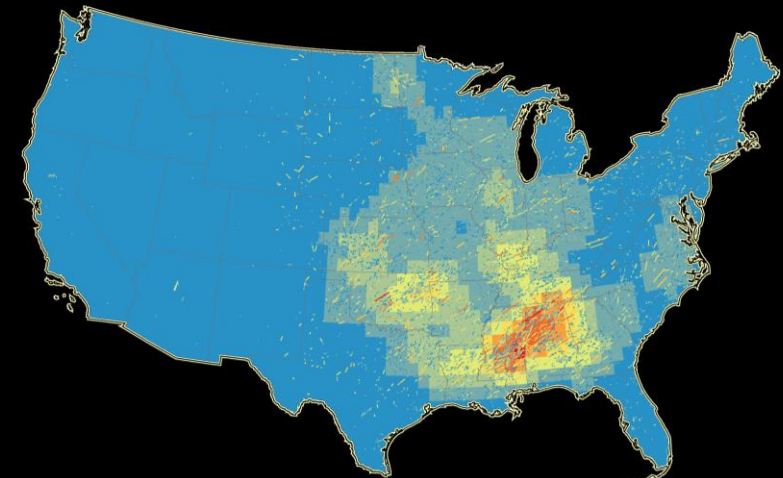
1950-1970



1970-1990



1990-2010



2010-present





**Human perception:
Nothing we can do to prevent damage**

FIELD



April 13, 2020 Chattanooga, TN
EF-3 Tornado

IBHS

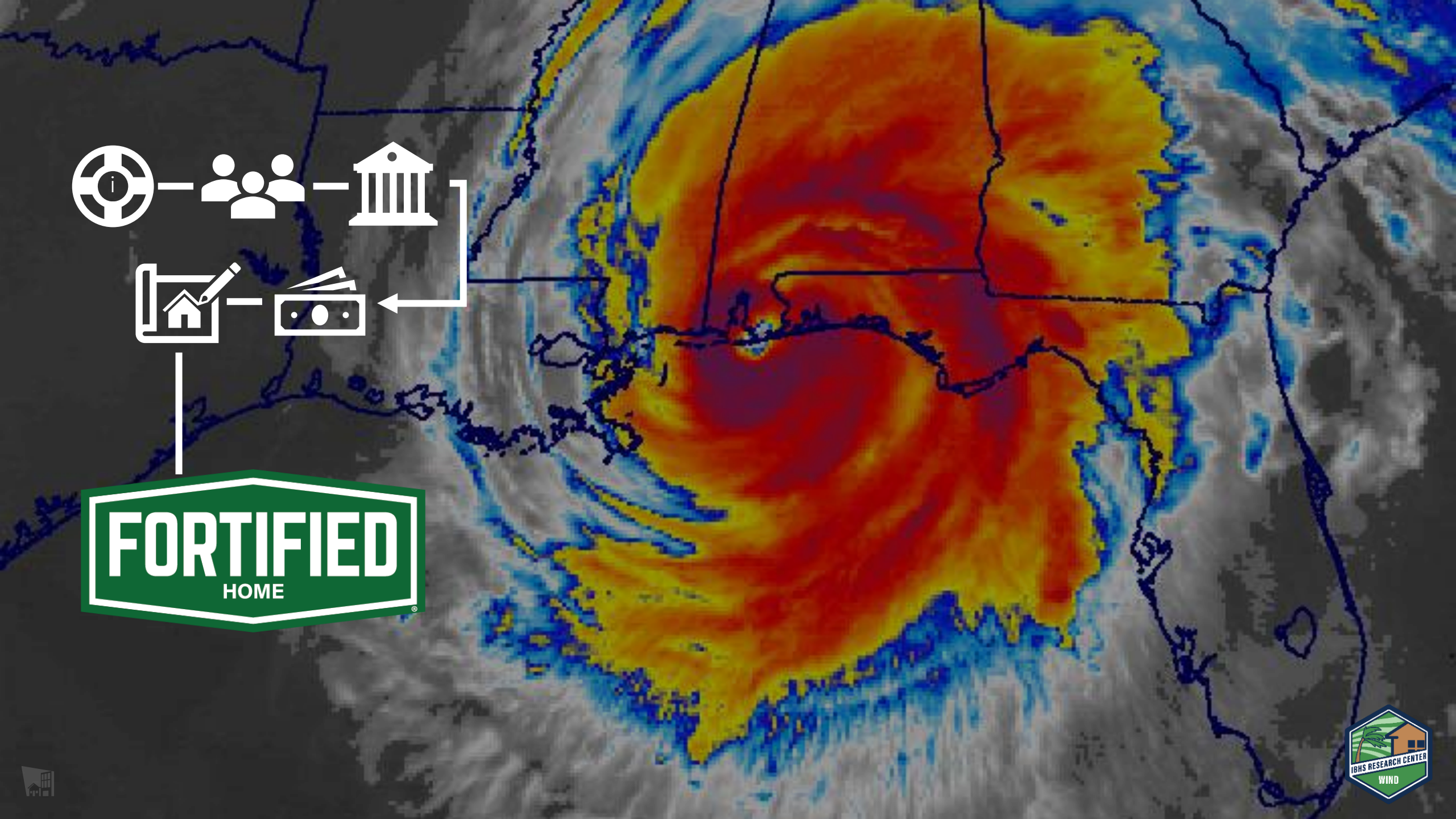


Hurricanes...



FORTIFIED





FORTIFIED
HOME

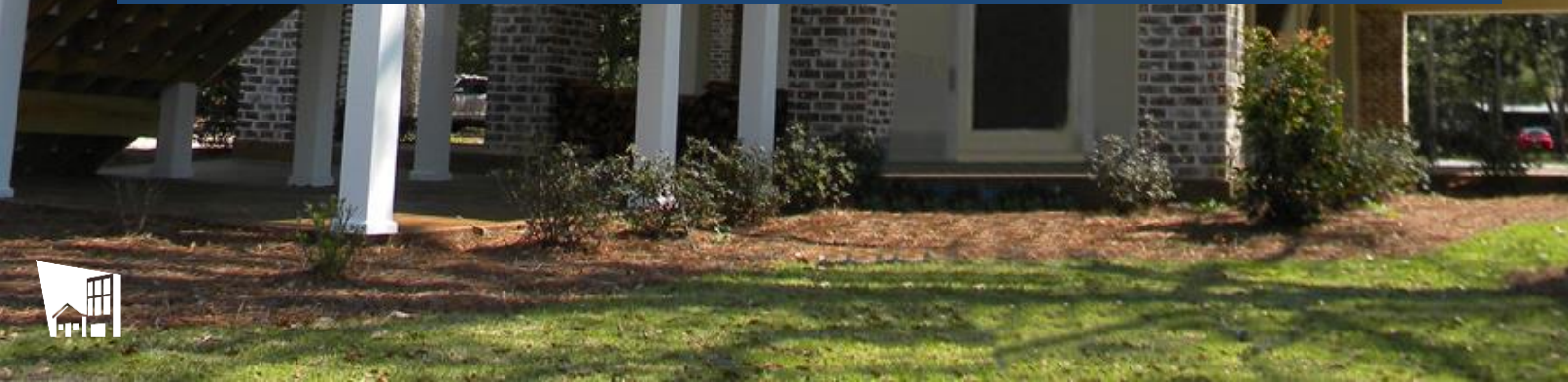




Added Value of Resilience

In Mobile & Baldwin counties, FORTIFIED Homes have **7% higher resale value.**

University of Alabama & Alabama Center for Insurance Information Research (2016)



FORTIFIED Performs Against Hurricanes

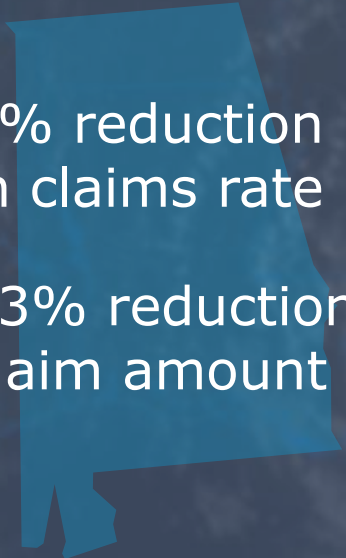
SALLY



7% reduction in claims rate



13% reduction in claim amount



ALABAMA

MATTHEW, FLORENCE, DORIAN, ISAIAS



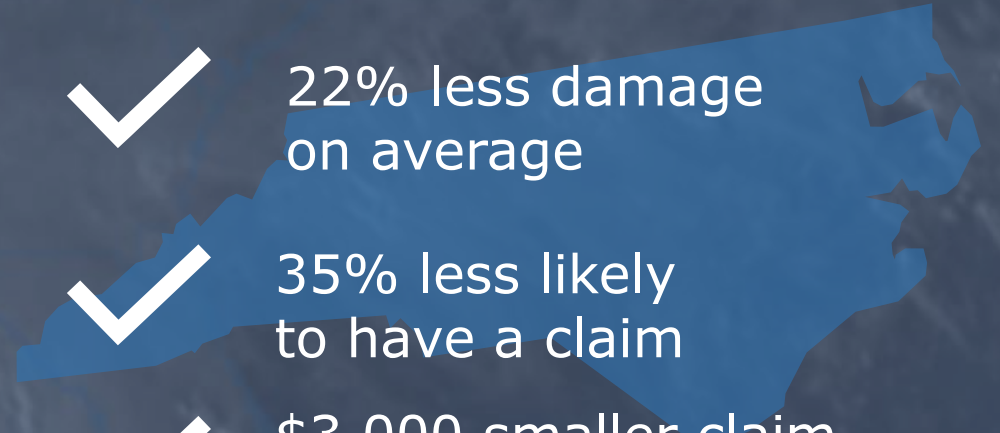
22% less damage on average



35% less likely to have a claim



\$3,000 smaller claim on average



NORTH CAROLINA

LOUISIANA NEWS

Program to incentivize La. homeowners to retrofit their roofs

GREATER BATON ROUGE
BusinessReport

Should fortified roofs be required on new homes in Louisiana?



Our Views: After incentive fund, fortified roofs next step



Legislators look to fund grants for fortified roofs



Winnfield lawmaker says paying homeowners to fortify against hurricanes will lower property coverage, ease state's insurance crisis.



IBHS WILDFIRE PREPARED RATING

Overall Rating	Debris Ridges	Tears	Gravel Loss
Excellent	Good	Good	Good
Good	Marginal	Good	Good
Marginal	Poor	Marginal	Marginal
Poor	Poor	Marginal	Poor

Legend: 1 Excellent 2 Good 3 Marginal 4 Poor

**WILDFIRE
PREPARED**
— A PROGRAM OF IBHS —





IBHS RESEARCH CENTER

WILDFIRE







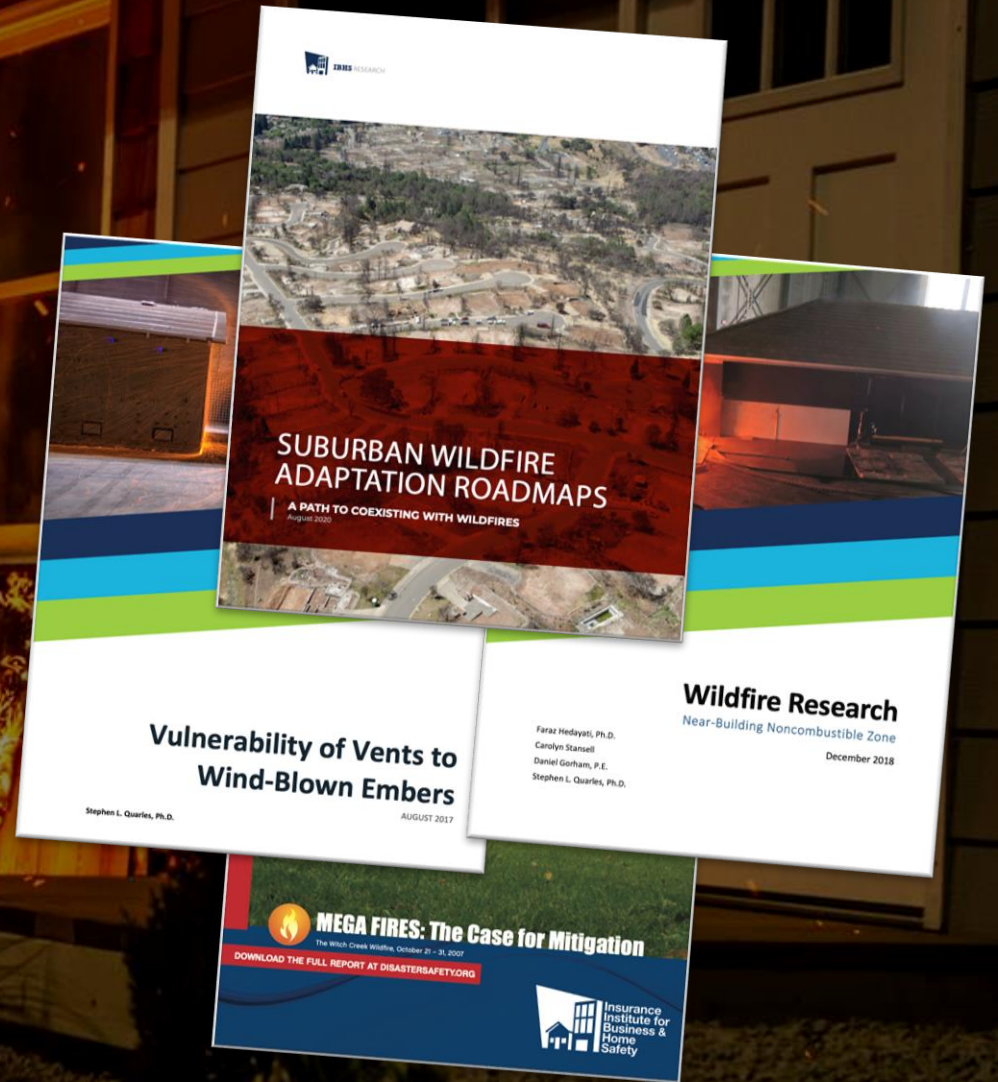
IBHS brings the knowledge.

**Research advances codes &
standards, improve test
methods, and inform
stakeholders.**



IT'S A SYSTEM.

Safer living requires homeowners, neighborhoods, and community planners to work together.



ROOF

- ✓ Choose a Class A fire-rated roof maintained clear of debris
- ✓ Choose noncombustible gutters & downspouts

WILDFIRE PREPARED HOME + PLUS

ADDITIONAL MITIGATION

- ✓ Remove back-to-back fencing
- ✓ Eliminate combustible siding
- ✓ Enclose eaves
- ✓ Enclose under bay windows
- ✓ Upgrade to a wildfire-resistant deck
- ✓ Upgrade windows & doors
- ✓ Cover gutters
- ✓ Move outbuildings at least 30 feet away

BUILDING FEATURES

- ✓ Install ember- & flame-resistant vents
- ✓ Ensure 6-inch vertical noncombustible clearance at base of wall

DEFENSIBLE SPACE

- ✓ Create & maintain the home ignition zone (0-5 ft) including the removal of branches that overhang this area
- ✓ Clear & maintain the underdeck area; enclose low-elevation decks
- ✓ Maintain yard clear of debris
- ✓ Replace combustible fencing within 5 ft of the home

**WILDFIRE
PREPARED**
— A PROGRAM OF IBHS —

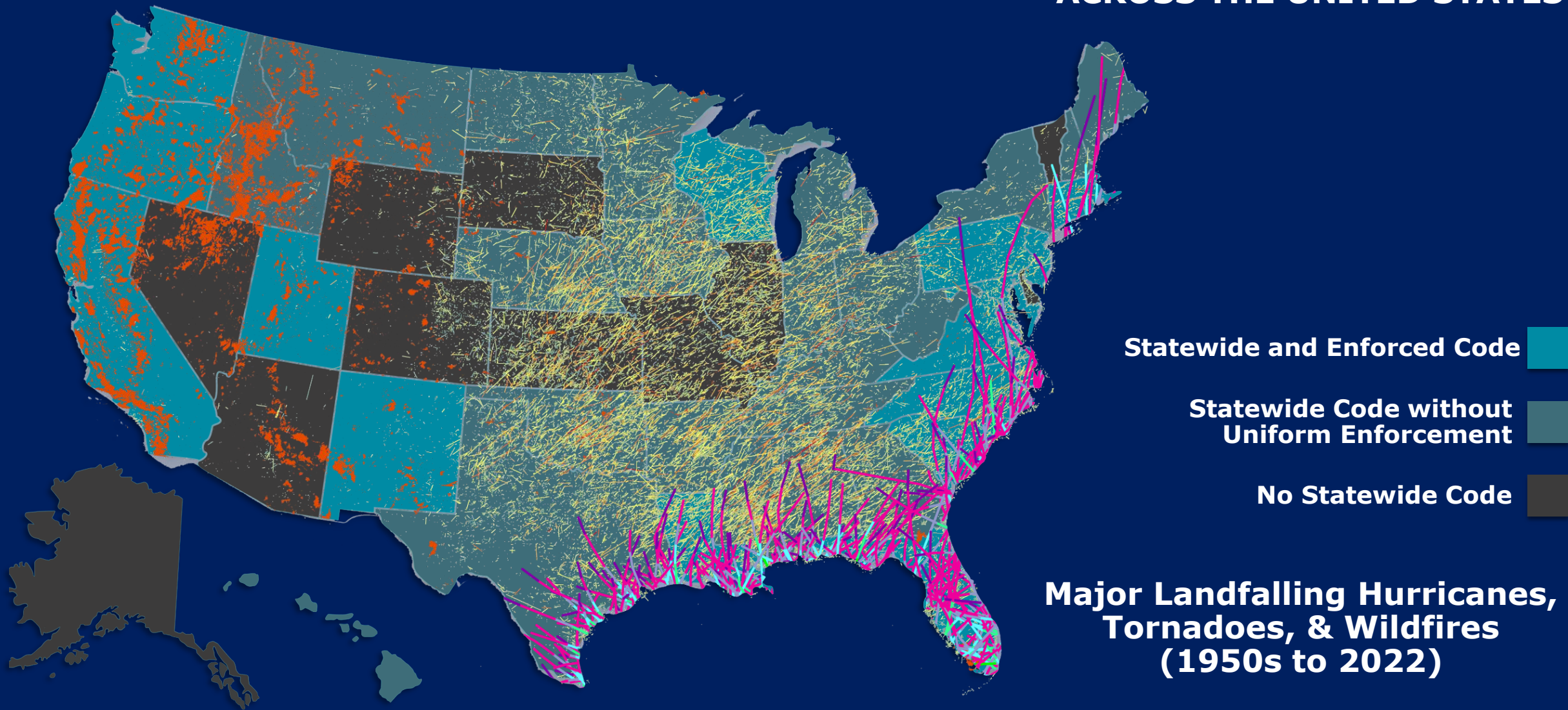


➔ [IBHS.ORG](https://www.ibhs.org)

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Statewide Building Codes

ACROSS THE UNITED STATES



The Alabama Success Story

