From Science to Solutions:
A More Survivable and Insurable Minnesota

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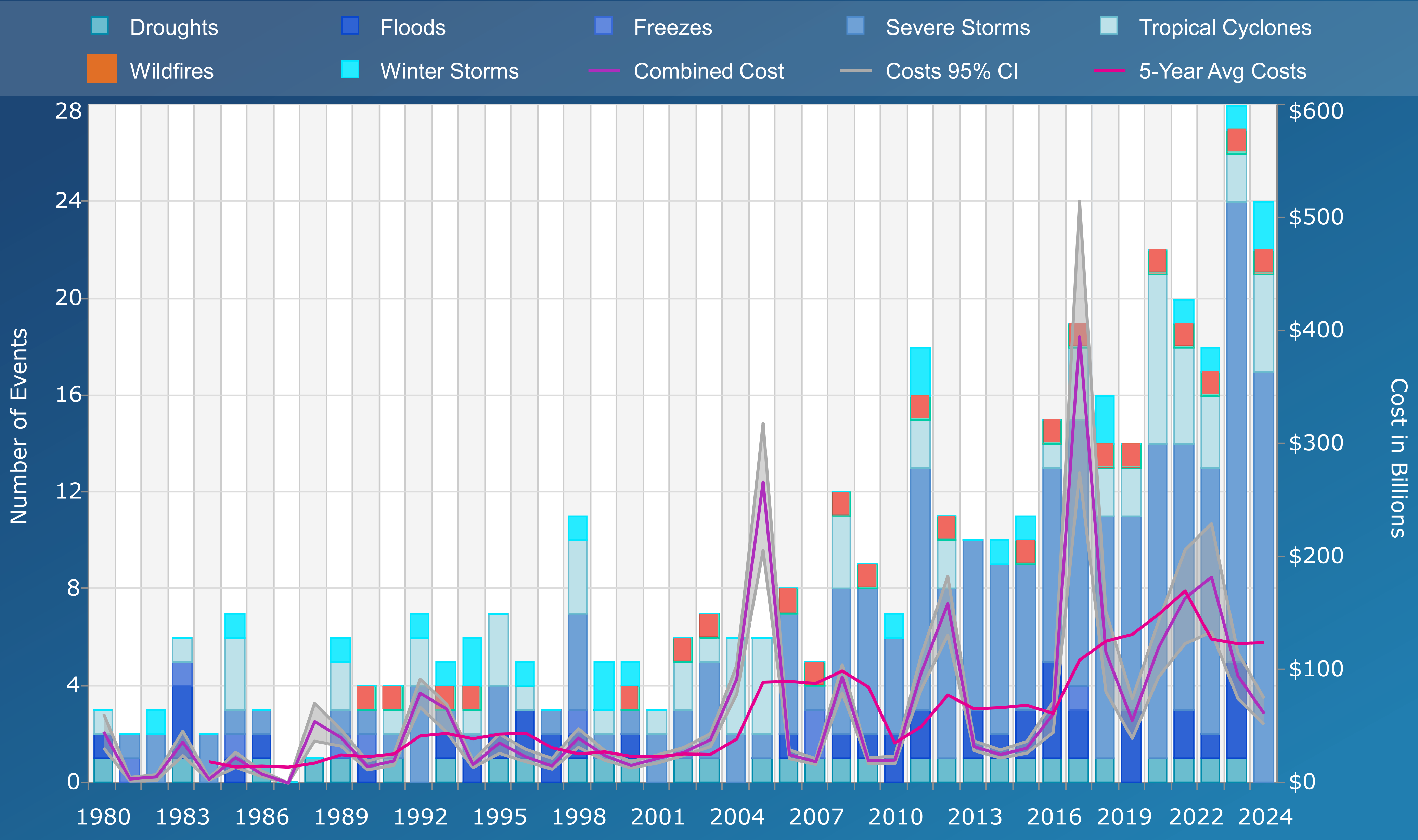
SEVERE CONVECTIVE STORMS

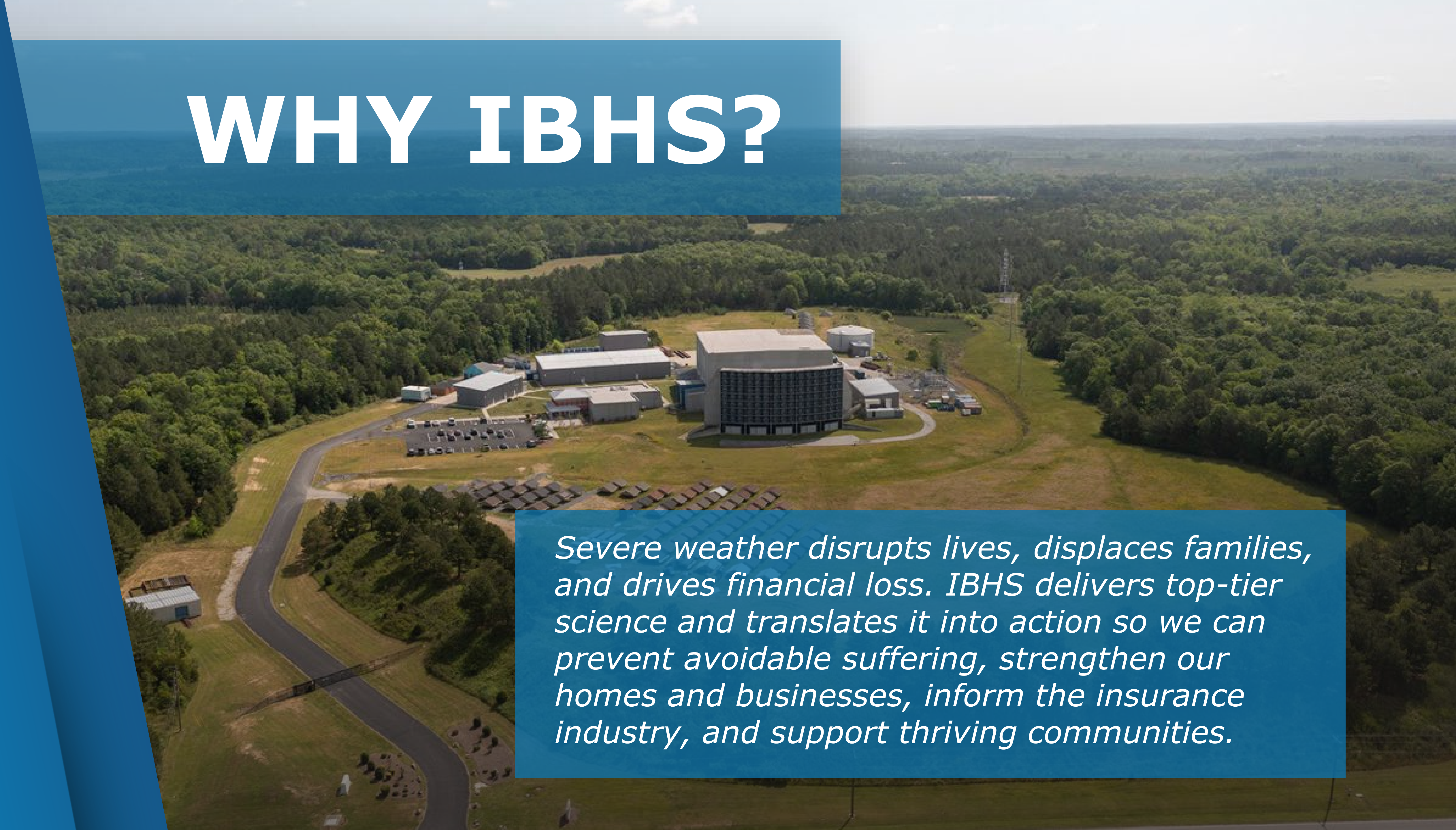
Photo by Ethan Mok, ICECHIP

United States Billion-Dollar Disaster Events 1980-2024 (CPI-Adjusted)



Updated: November 1, 2024

WHY IBHS?



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.

Minnesota’s Core Perils

PROGRESSION OF DAMAGE

Roof cover, soffits, fascia

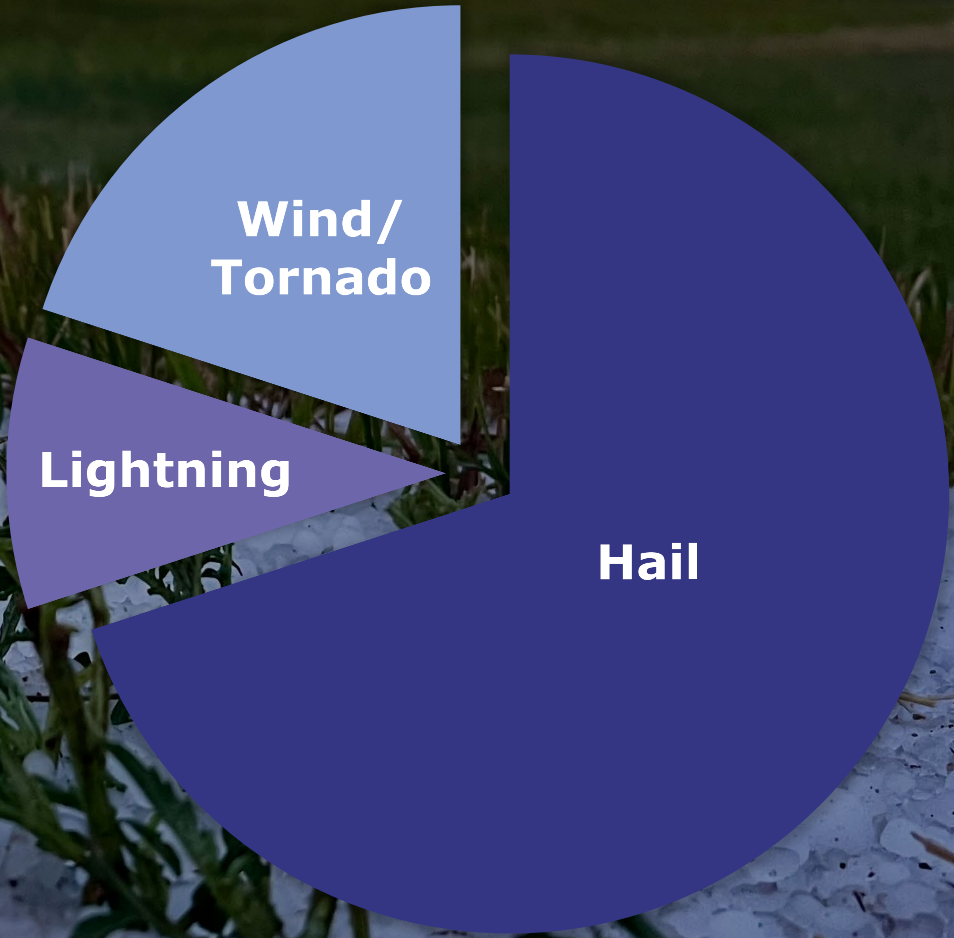
Wall cover

Roof sheathing, roof structure

Total collapse


3

Hail accounts for **70%** of average annual loss.



Severe Convective Storm Hazards and Loss

Loss by SCS hazard from Moody’s Risk Management Solutions

GOOD and **EXCELLENT** performing asphalt shingles could **ELIMINATE** the need for **ONE ROOF REPLACEMENT CYCLE.**


FORTIFIED
HOME
FORTIFIED
COMMERCIAL
FORTIFIED
MULTIFAMILY

FORTIFIED ROOF

Keep the roof on and water out.
Enhanced by a sealed roof deck.
High wind rated roof cover.

FORTIFIED SILVER

Keep the roof on, water out.
Reduce damage amplifiers:
Strengthen gable walls & porches.
Strengthen garage door openings.
Protect openings against debris impact.**

FORTIFIED GOLD

Keep the roof on, water out.
Reduce damage amplifiers.
Keep the entire building intact with a continuous load path (CLP).
Protect openings against high pressures.**

FORTIFIED Home

FORTIFIED *COST DIFFERENTIALS*

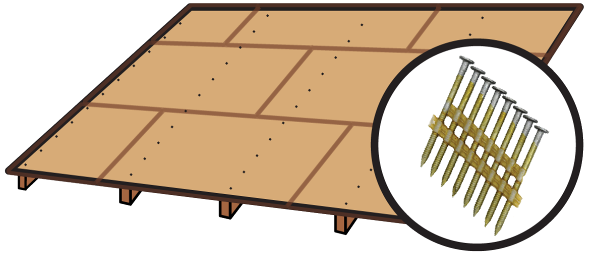
vs. Code

+13-15%

vs. Code

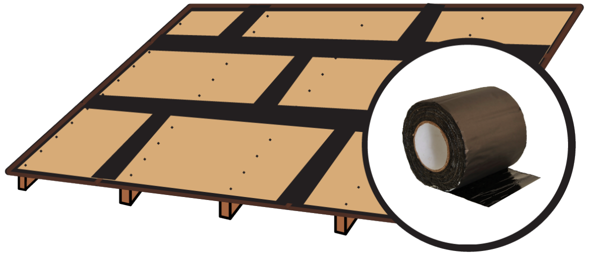
+22-24%

1. KEEP THE ROOF ON.



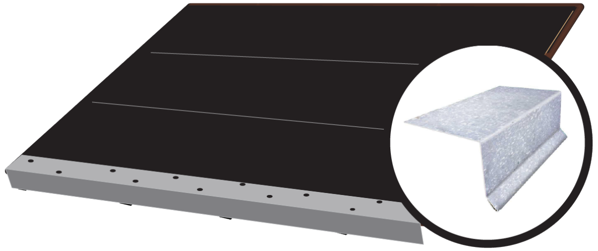
Stronger Connections

2. KEEP THE WATER OUT.



Sealed Seams

3. KEEP THE WIND OUT.



Lock the Edges Down

4. DEFEND THE SHINGLES.

Choose an Impact-Rated Shingle**

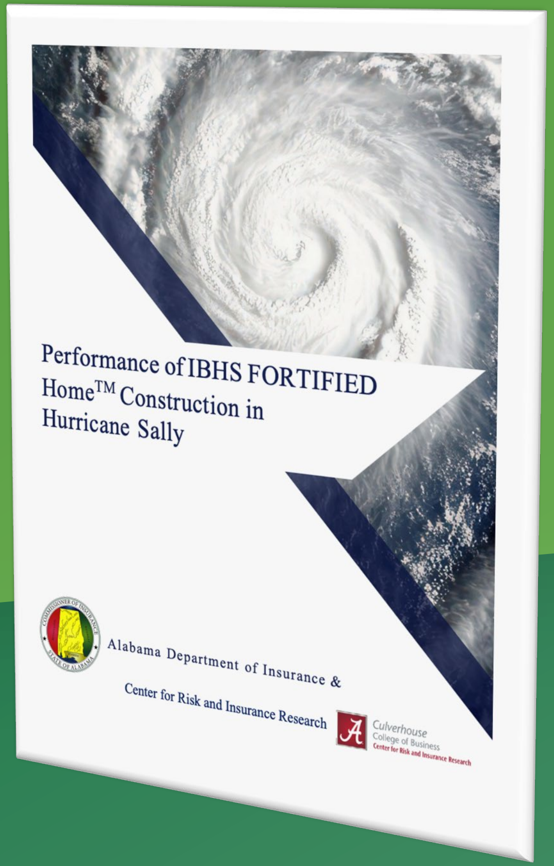
FORTIFIED ROOF

WHEN SHINGLES FAIL, THE SEALED ROOF DECK KEEPS THE RAIN OUT.


FORTIFIED
ROOF

HURRICANE SALLY Results

40,000 Properties



TOTAL DAMAGE **could have been reduced by *$42M* for Homeowners**

70% **reduction in Claim Frequency**

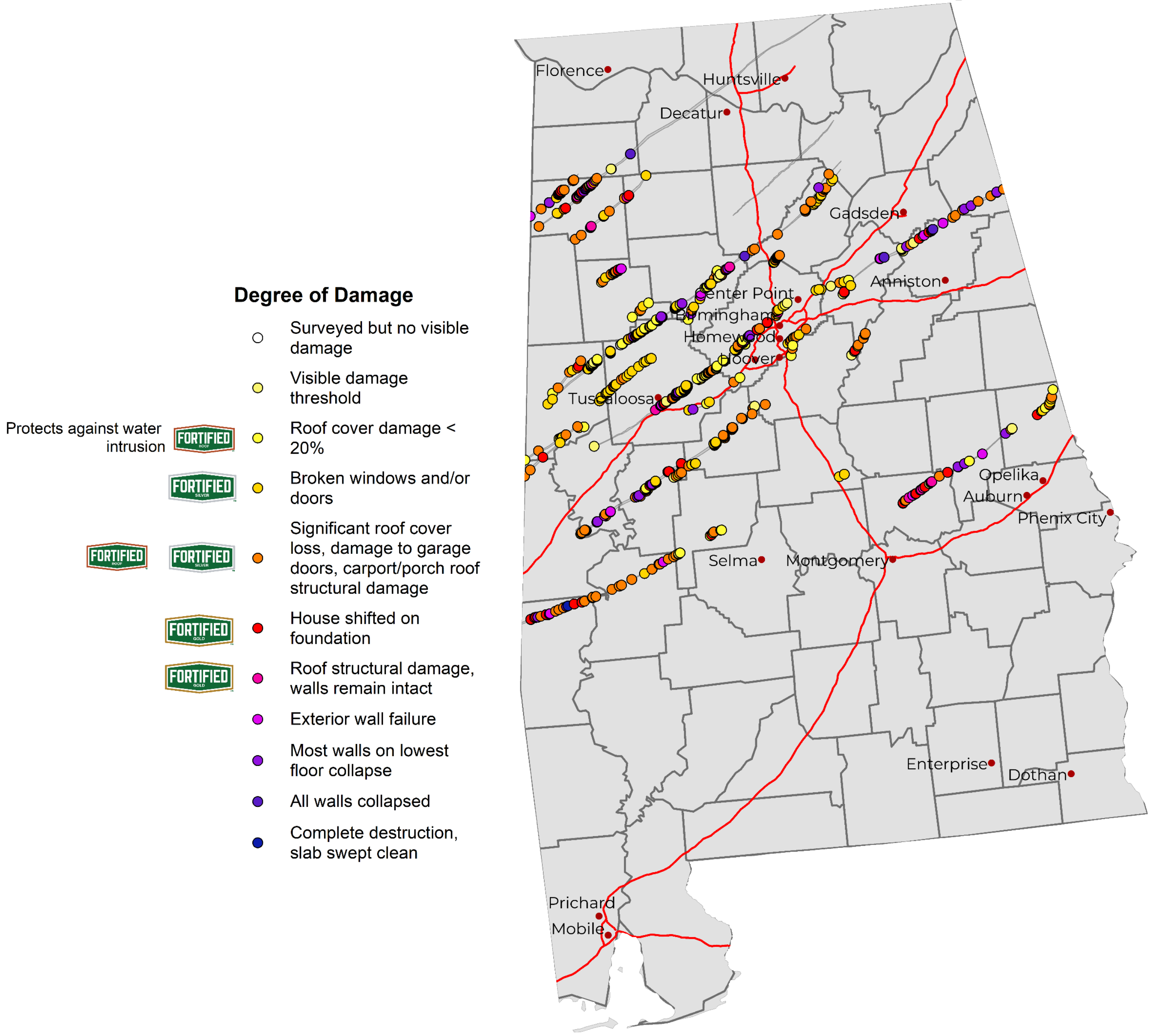
22% reduction in average claim amount

$105.6M **in Insured Losses**

In this event,

42% of single-family home damage is *ADDRESSED with elements in FORTIFIED.*

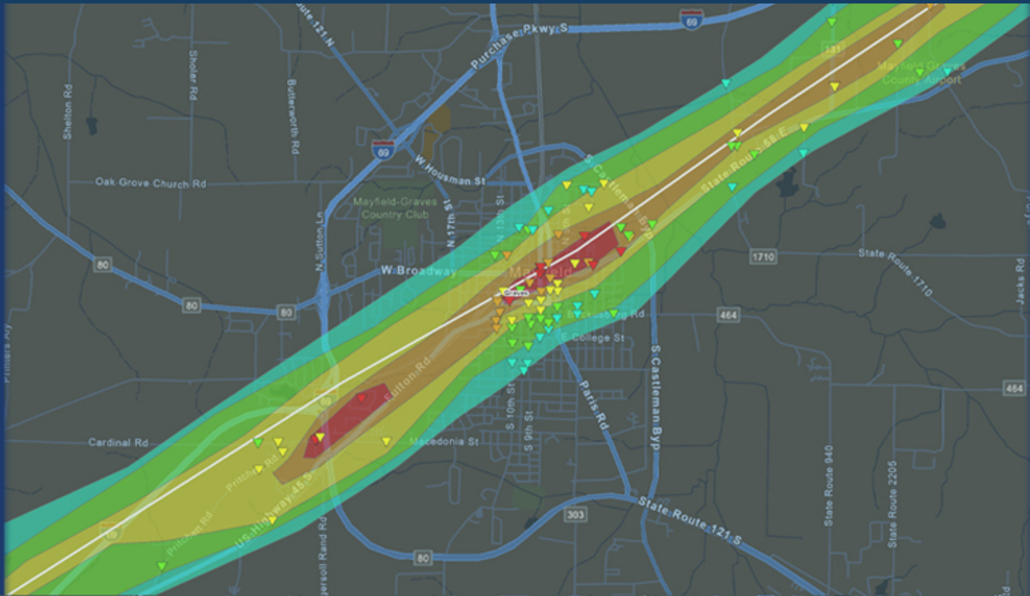
2011 Super Outbreak
Alabama Tornadoes of April 26- 28



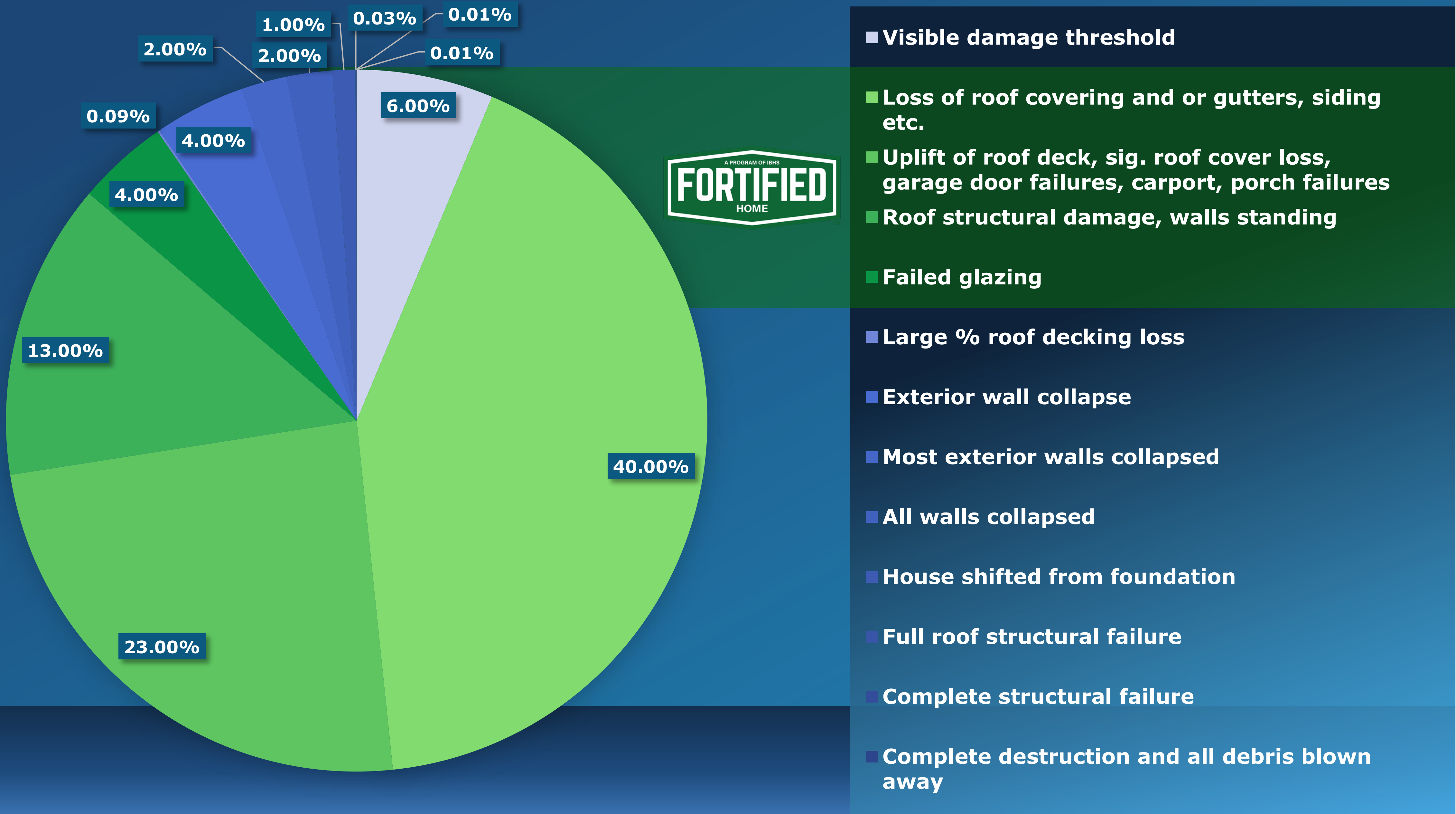
DEGREES OF DAMAGE
SINGLE FAMILY HOMES

- THRESHOLD OF VISIBLE DAMAGE
- FORTIFIED ROOF — LOSS OF ROOF COVERING MATERIAL (<20%)
- FORTIFIED SILVER — BROKEN GLASS IN DOORS & WINDOWS
- FORTIFIED ROOF, FORTIFIED SILVER — LOSS OF SIGNIFICANT ROOF COVERING GARAGE DOORS COLLAPSE; FAILURE OF PORCH
- FORTIFIED GOLD — ENTIRE HOUSE SHIFTS OFF FOUNDATION
- FORTIFIED GOLD — LARGE SECTIONS OF ROOF STRUCTURE REMOVED
- COLLAPSE OF EXTERIOR WALLS
- MOST WALLS COLLAPSED
- ALL WALLS COLLAPSED
- DESTRUCTION OF ENGINEERED RESIDENCE

MAYFIELD, KY
EF-4 TORNADO TRACK



TORNADOES (2014-2022)



FORTIFIED GROWTH
Across the Country

Over 86,000 DESIGNATIONS NATIONWIDE

GROWING BY MORE THAN **1,500** PER MONTH

DESIGNATIONS ISSUED TO HOMES IN 34 STATES

As of Oct 2025

RESILIENT RETROFITS & NEW CONSTRUCTION

FORTIFIED
A PROGRAM OF IBHS

Code Environment

Price Considerations

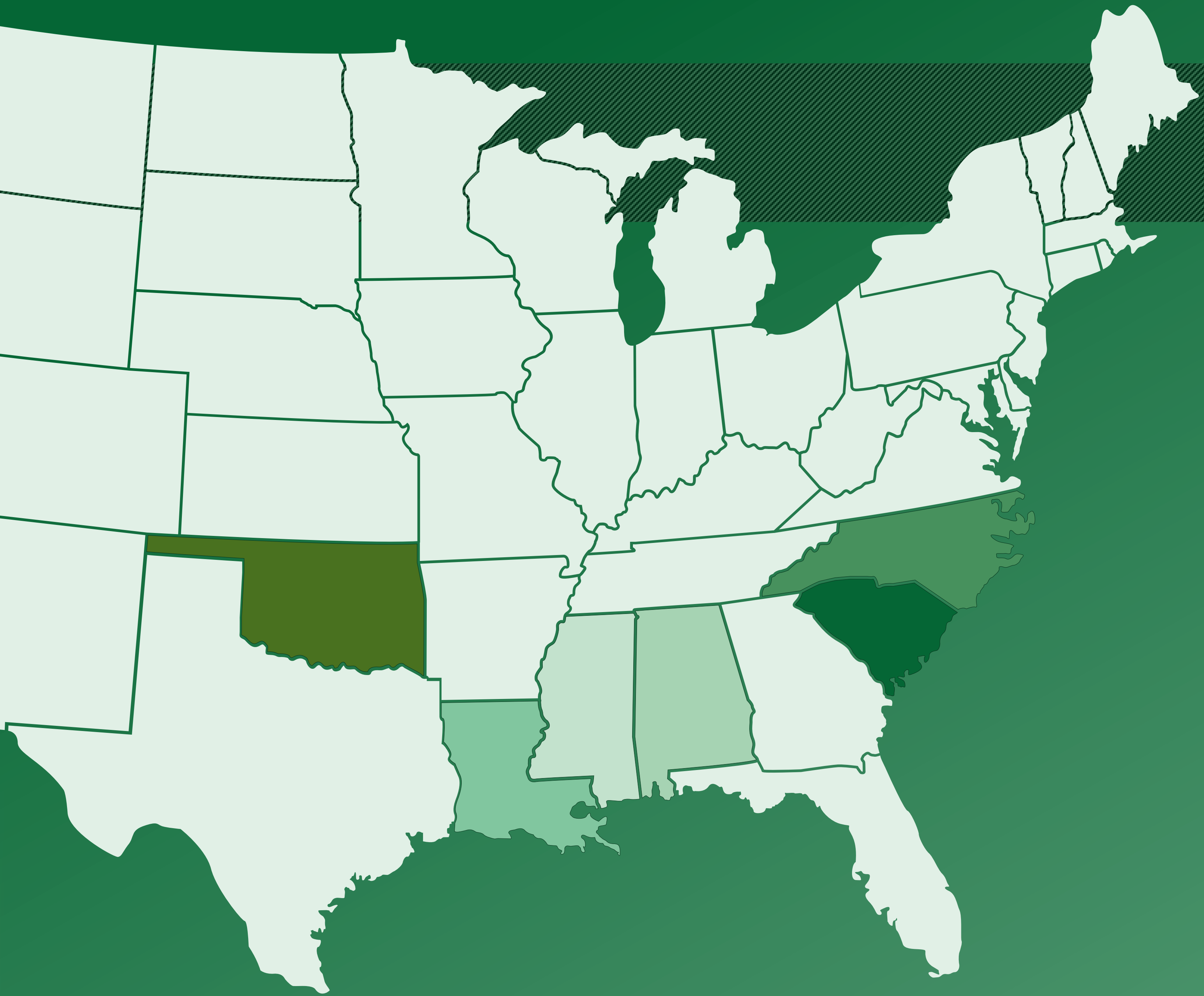
Local Engagement

National Roofers

National Builders

Grant Funded

FORTIFIED **Designations**



67.6%	South Carolina
57.8%	Oklahoma
54.8%	North Carolina
39.7%	Louisiana
19.3%	Alabama
2.5%	Mississippi

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