



Custom Insights with HurLoss® Vulnerability Modeling

A FIRST-PRINCIPLES ENGINEERING APPROACH TO HURRICANE RISK, DESIGNED TO DELIVER ACTIONABLE, PORTFOLIO-LEVEL INSIGHTS

HurLoss® applies a first-principles engineering framework to evaluate how buildings respond to hurricane winds and how that response translates into financial loss. By accounting for system behavior, wind speed dependence, and building characteristics, the approach supports more informed assessment of risk at both the individual and portfolio levels.

ARA's HurLoss® approach provides customized insights into factors influencing insured loss, such as:

- Building size and complexity
- Roof cover aging
- Roof-only losses & effect of Actual Cash Value (ACV) coverage

VULNERABILITY MODELING APPROACH

HurLoss® evaluates damage to the building envelope and structural system under direct wind loading. Building features are treated as an integrated system, or a chain that is only as strong as its weakest link, rather than as independent components.

- Evaluates building envelope and structural system as an integrated whole (“the chain”)
- Accounts for weak links across features in the chain (roof cover, roof deck, openings, load path)
- Derives wind loads from building geometry (shape, size, height)

HurLoss® evaluates interdependent components simultaneously to account for weak links.

TRANSLATING PHYSICAL DAMAGE TO FINANCIAL LOSS

- Repair/replacement costs using national cost data
- Expressed as subassembly cost ratios
- Empirical models for interior damage relationships based review of thousands of closed claims
- High-fidelity loss functions reflect real-world outcomes

HurLoss® enables targeted insights for underwriting and portfolio strategy.



FOR MORE INFORMATION, CONTACT:
JEFF SCIAUDONE | PRINCIPAL ENGINEER
919-582-3325 (OFFICE) | JSCIAUDONE@ARA.COM

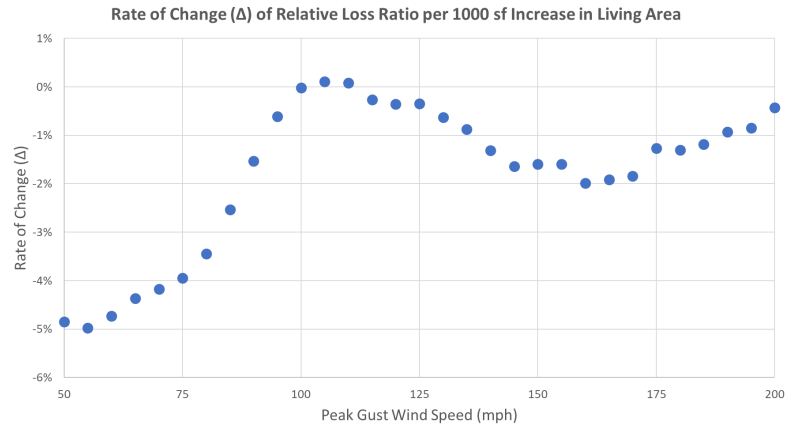


CUSTOMIZATION INSIGHT: BUILDING SIZE & COMPLEXITY

Building size and complexity fundamentally change how wind interacts with a structure.

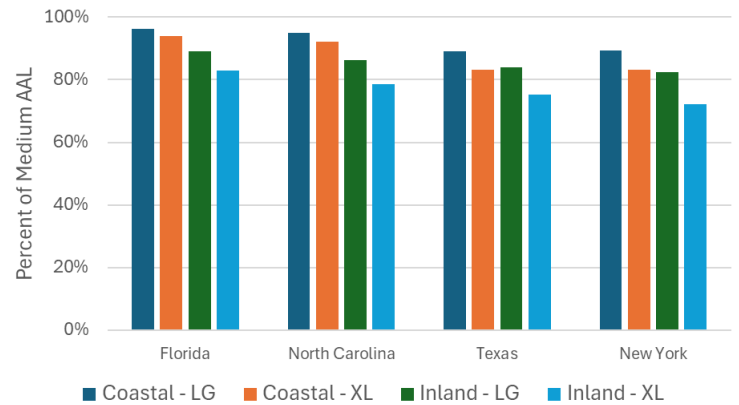
KEY FINDING: Changes in loss functions are wind speed dependent. The effect of increasing the size and complexity of buildings is not uniform over all wind speeds.

Linear adjustments or simple scaling miss this behavior, but HurLoss® takes a deeper dive.



KEY FINDING: Because the effect on the loss curves varies by wind speed, we see different effects when we look at this in terms of AAL for different locations with different wind hazard levels.

- Relative AALs decrease with building size for all locations
- Relative AALs decrease as we move inland in each state (to lower hazard areas)
- Relative AALs decrease as we move from higher hazard to lower hazard states



HurLoss® combines geographic distribution and building characteristics for enhanced insights.

THE BOTTOM LINE

The HurLoss® vulnerability modeling approach provides **effective**, **actionable**, and **customizable** insights.

- Comprehensive evaluation of features, including:
 - Wind loads on structures
 - Strength of individual components
 - Distribution of value for building subassemblies
- Impacts are quantified by wind speed bin – not a simple linear shift or amplification
- Component losses can be isolated to evaluate sub-limits and Actual Cash Value valuations



FOR MORE INFORMATION, CONTACT:
JEFF SCIAUDONE | PRINCIPAL ENGINEER
 919-582-3325 (OFFICE) | JSCIAUDONE@ARA.COM