



# The Disaster Safety Movement

*Making Mitigation Work Webinar*

Leslie Chapman-Henderson  
Tuesday, January 14, 2020



# Today's discussion ...

- Background on the disaster safety and resilience movement
- Understanding challenges and finding solutions to advance building codes and standards

Mission/strategy ... strengthening homes and safeguarding families from disasters of all kinds by creating awareness, understanding, and demand for building codes and beyond-code construction practices.





- 1998 – *Volunteer committee of emergency managers, insurers, meteorologists, and organizations dedicated to strengthening homes and safeguarding families*
- Today – *Nonprofit coalition of more than 100 academic, corporate, nonprofit, and government partners*





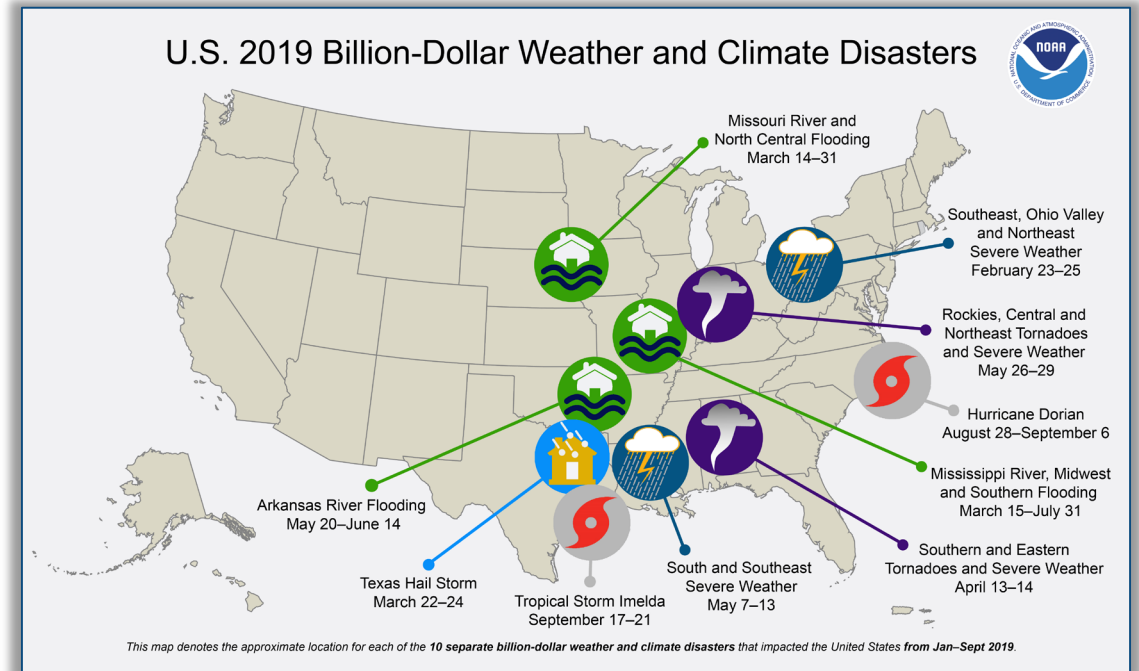
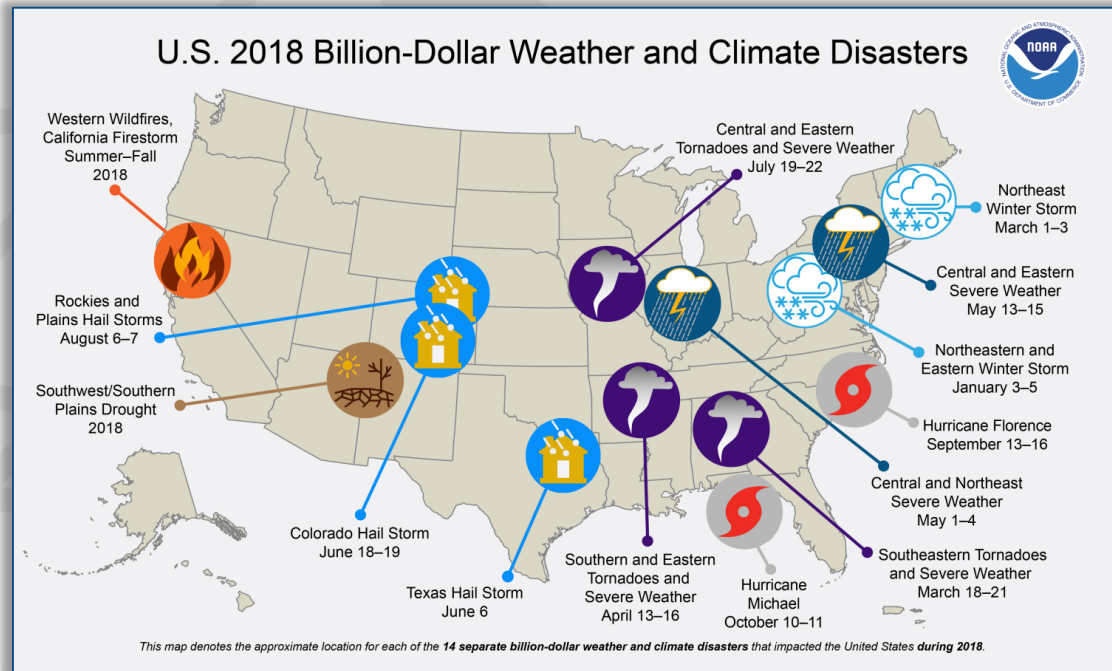
# Building codes ... proven performers



## Rockport, Texas after Hurricane Harvey

Photo courtesy of the 2017 FEMA Hurricane Harvey Mitigation Assessment Team (MAT)

# Accelerating disaster impacts



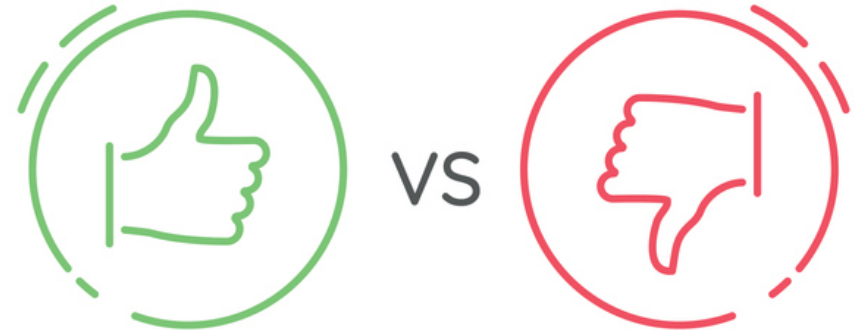
- Billion dollar disasters increasing:
  - 1980 – 2018 annual average is 6.2 events
  - Annual average for 2014 – 2018 is 12.6 events
  - 2019 is the fifth consecutive year (2015-2019) in which 10 or more billion-dollar weather and climate disaster events have impacted the United States

## Yet, there are challenges ...

- Jurisdictions with One or More Hazards (Seismic, Hurricane, Flood, Tornado, Wind)
- Building Codes Adopted with Disaster-Resistant Provisions Incorporated for Commercial and Residential Buildings
  - 7,265 of 23,143 (31%)
  - Approximately **69%** of U.S. communities facing one or more of the above-described hazards is doing so without the benefit of current, relevant structural building codes

# BCAP – The Approach

1. Conduct behavior-focused study to support development of public awareness campaign strategies, messaging, and assets
  - Identify communication barriers; identify levels of understanding of building codes; identify motivators to drive appreciation for building codes
  - Benchmark current attitudes and behaviors
2. Create data-driven transparency tool
3. Implement national awareness program







## Why Americans Aren't Concerned About Building Codes (*even though they should be*)

*Understanding the research-inspired "No Code. No Confidence." outreach campaign to increase public awareness and decrease the policy gap between vulnerable and resilient communities*

Co-Authors: Leslie Chapman-Henderson  
President and CEO

Audrey K. Rierson, J.D.  
Senior Policy Analyst

Disclaimer and Notices. This material is for informational and educational use only, and it is in no way intended to constitute legal advice. Additionally, neither the Federal Alliance for Safe Homes (FLASH)®, nor any of their employees, subcontractors, partners or agents makes any warranty, expressed or implied, nor assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, product, or process included in this publication. While reasonable efforts were taken to make this material accurate and up-to-date, changes may occur that render it no longer current or applicable to any given circumstance. Users of information from this publication assume all liability arising from such use.

# 2 OUT OF 3

Two out of three places prone to severe weather **don't have** the **building codes they need.**

See if your local building codes protect you.

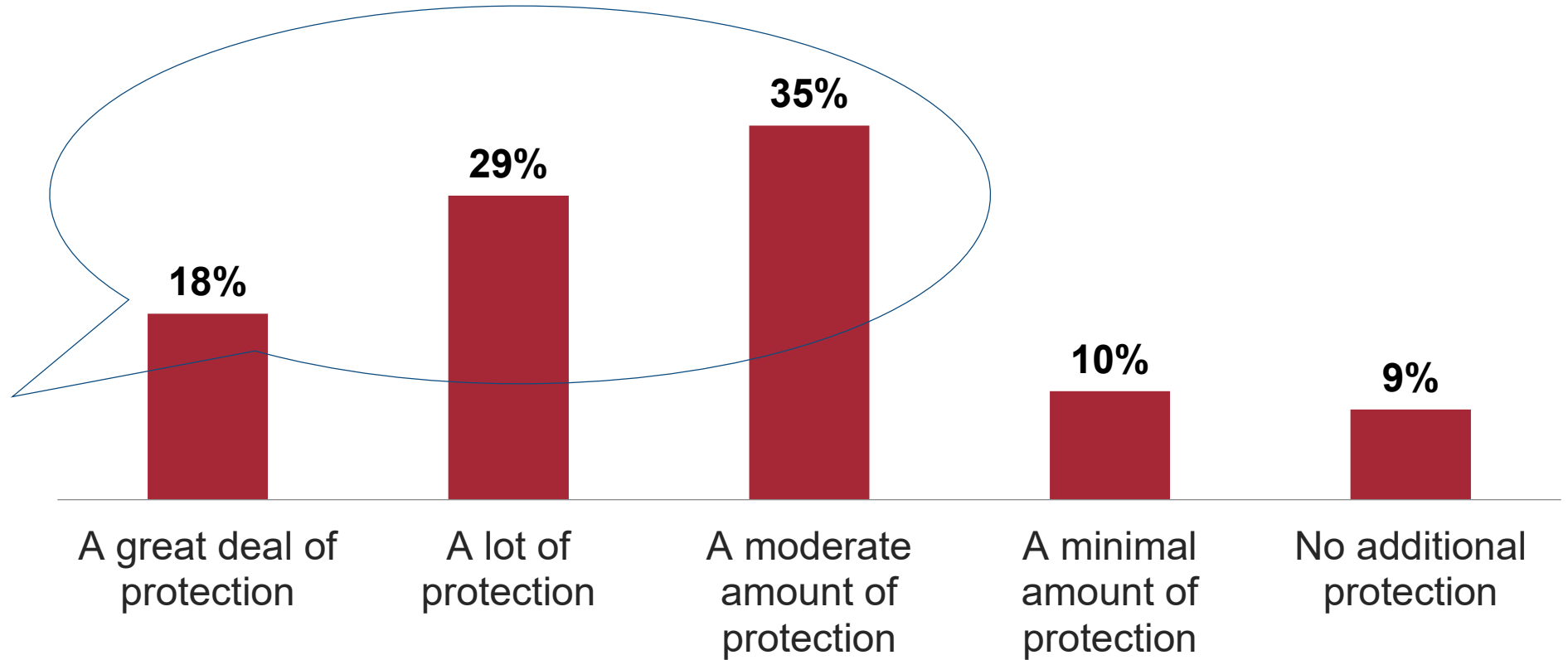
**InspectToProtect.org**



NO CODE. NO CONFIDENCE.

# No real reason to worry: We're protected already.

*Assumed Protection from Building Codes*

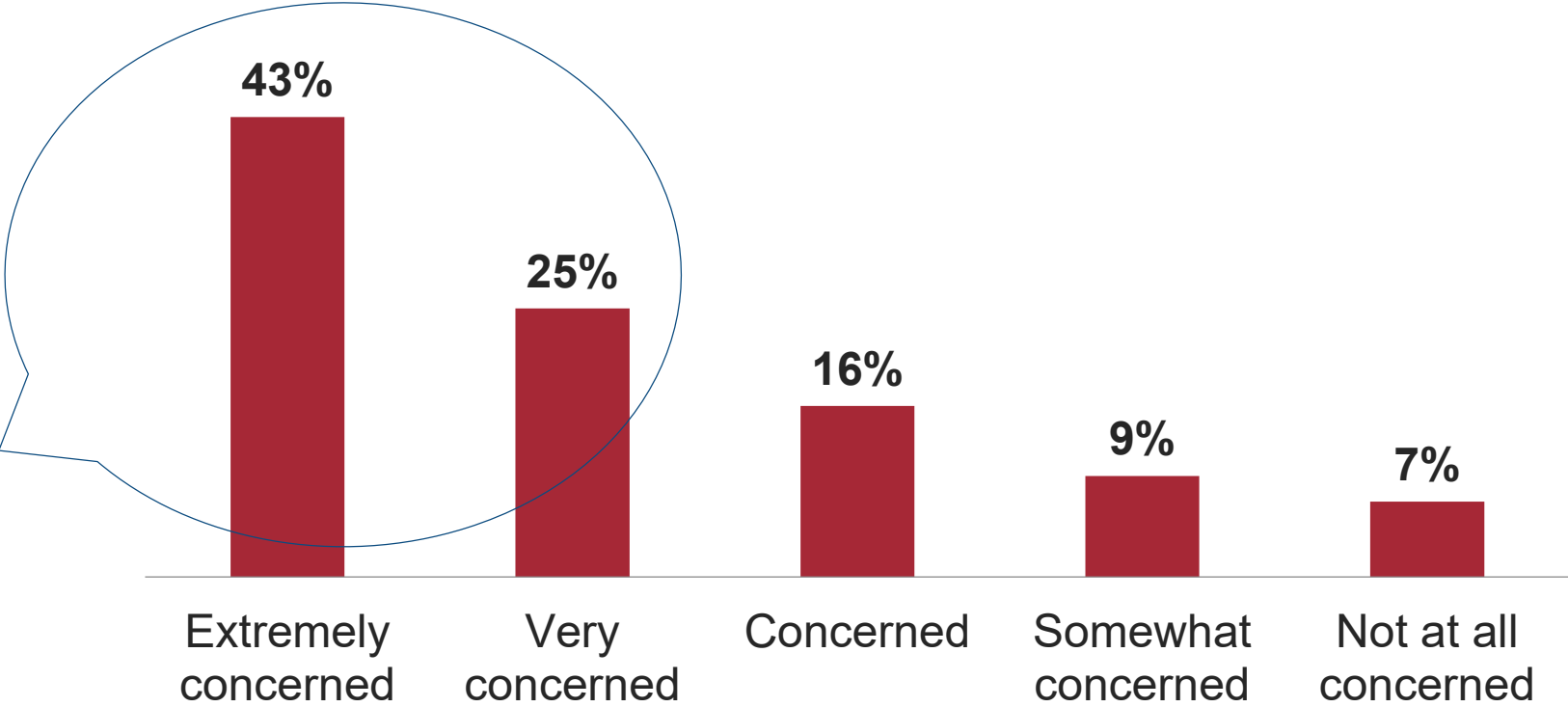


**8 out of 10**  
Americans assume  
they are at least  
moderately  
protected.

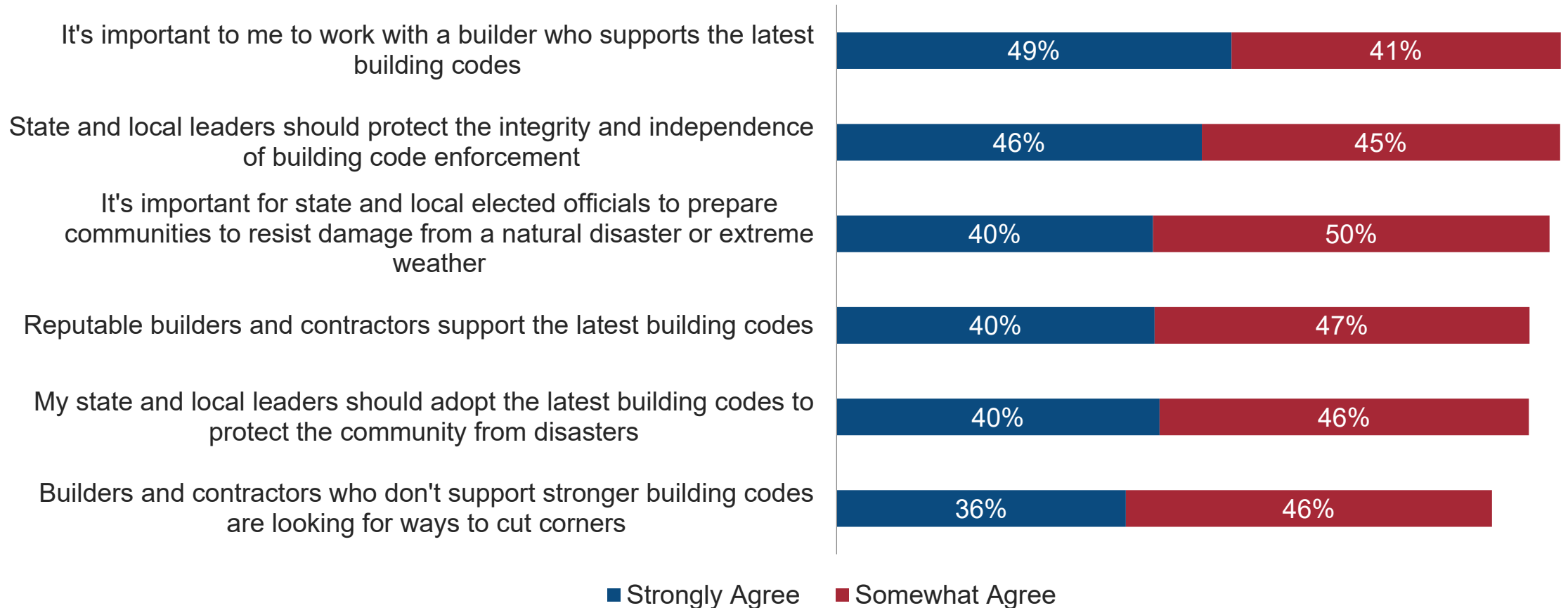
# What truly frightens Americans: No code at all

Concern If Had No Building Code

**No code?** Two-thirds of Americans would be very or extremely concerned.



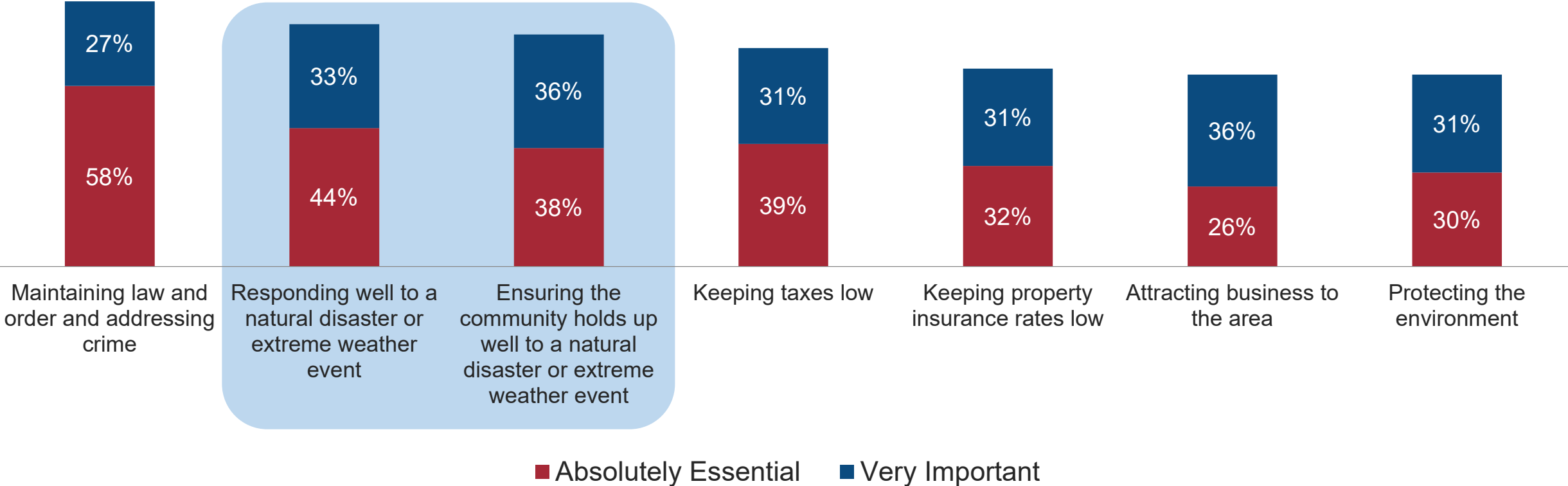
# While most aren't engaged with codes, they have high expectations of their officials and builders



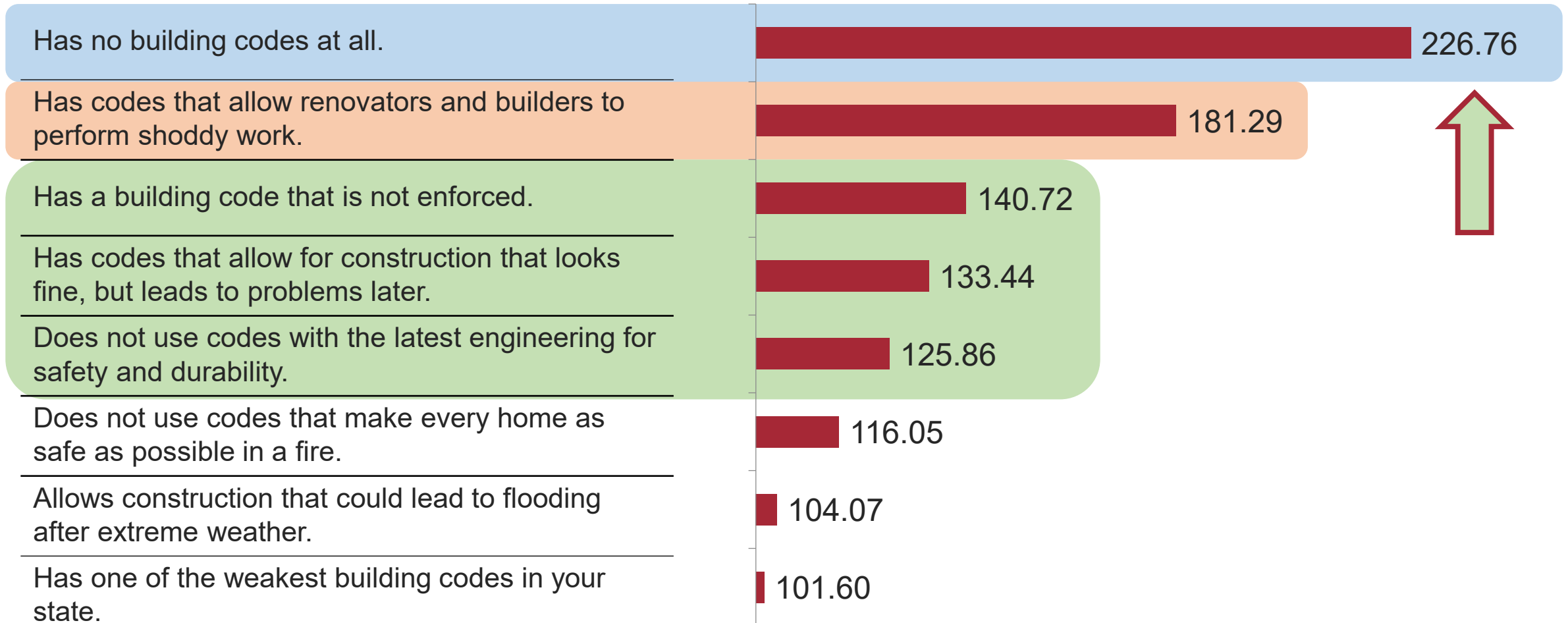


# Officials' response to and prep for disaster more important than taxes, business & environment

Importance to an Elected Official's Job



# Findings – undercut assumptions/focus on specific benefits





**NO CODE. NO CONFIDENCE.**

**GET STARTED**

Modern building codes ensure that your home is built using the latest practices and standards. Use this tool to determine the building codes used in your community today, or contact your local government for information about building codes used in the past.

**Frequently Asked Questions**

**Request Free Toolkit**



# How does it work?

This simple tool will help you understand residential code status in your community.

**1**

Once we have your location, you will see a map of your area.

**2**

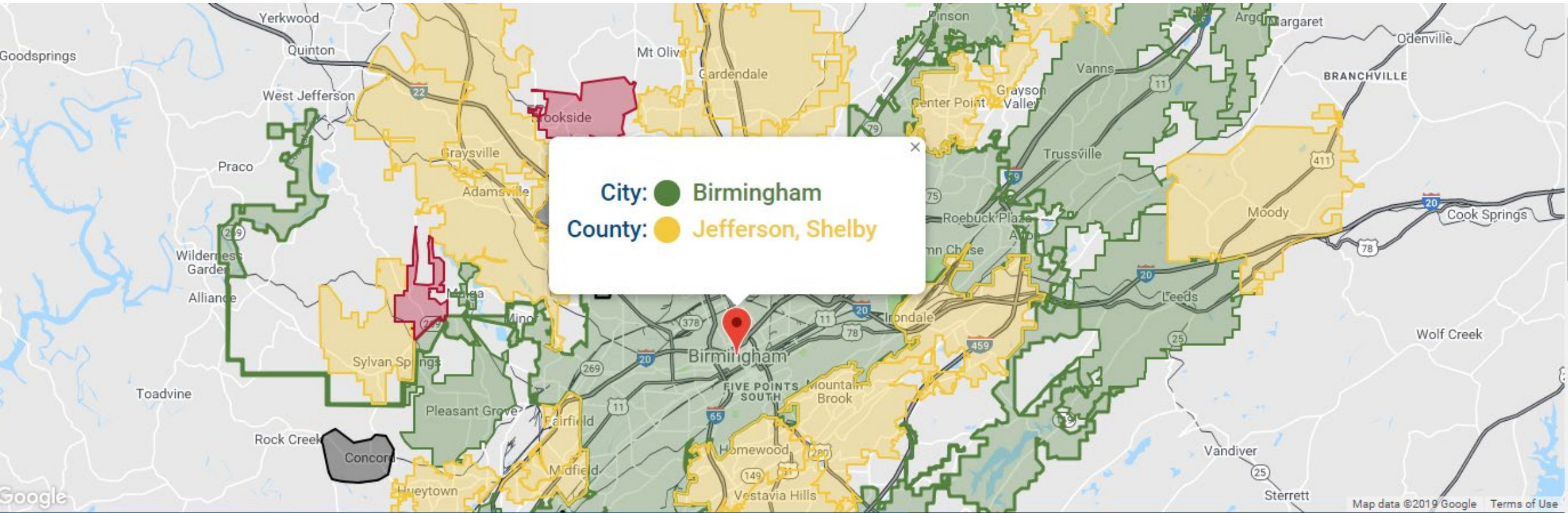
Our data is color coded for your convenience.

**3**

Check out surrounding communities and share with your friends.

[SHOW ME THE CODES](#)





# Birmingham, Alabama

## 35203

[CHANGE LOCATION](#)

[VIEW COUNTY](#)

[HOW IT WORKS](#)

- Code Not Adopted
- Current Code Adopted
- Code Out-of-Date
- Unavailable



## Getting the word out ...

- Multiyear implementation
- 2019 *Building Safety Month*
- Creative assets
  - Partner engagement (briefings)
  - Traditional/social media advertising and promotion
  - Ongoing news generation and general promotion
  - Partnerships w/ broadcast community
    - *The Weather Channel* (Dr. Rick Knabb & Alex Wilson of *Weather Underground*)
    - On-camera meteorologists



# Partner Badge



This badge can be used by partners to drive traffic to [InspectToProtect.org](https://InspectToProtect.org). It can be placed as a clickable image on any website, as well as printed materials or even produced as stickers. Overall, it's a flexible way to show you're on board and continue spreading awareness.



**NO CODE. NO CONFIDENCE.**

**GET STARTED**

Modern building codes ensure that your home is built using the latest practices and standards. Use this tool to determine the building codes used in your community today, or contact your local government for information about building codes used in the past.

**Frequently Asked Questions**

**Request Free Toolkit**



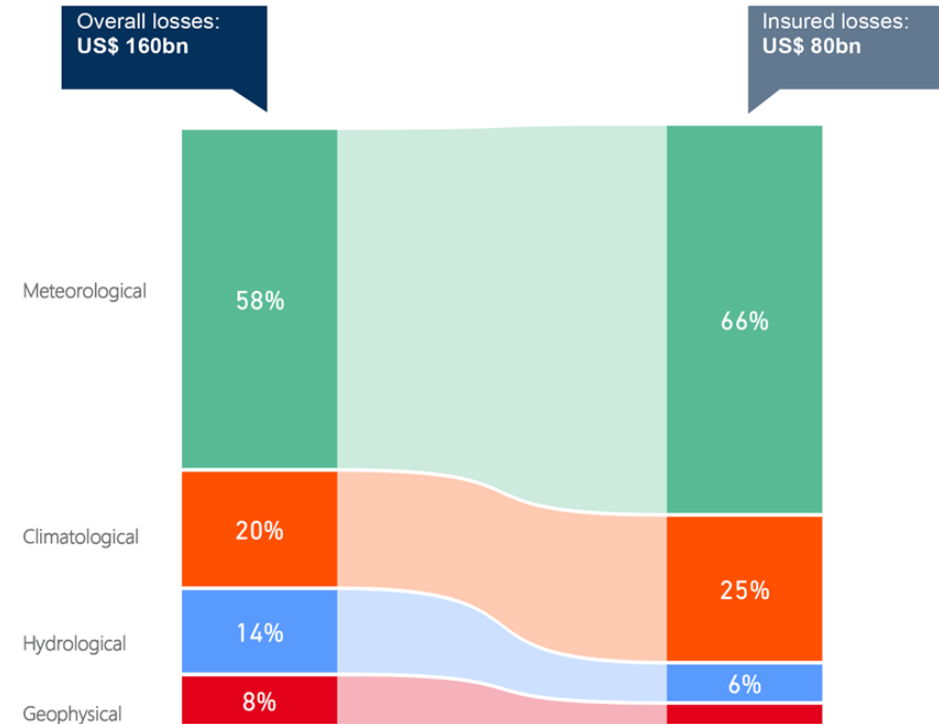


**Leslie Chapman-Henderson**  
**Leslie@FLASH.org**  
***Twitter: @LCHenderson &***  
***@FederalAlliance***  
**Facebook.com/FederalAlliance**  
**YouTube.com/stronghomes**

# Increasing Cost of Disasters

- The global economic impact of natural disasters in 2018 was \$160 billion
- Losses from tropical cyclones amounted to \$57 billion
- The California wildfires alone resulted in losses of \$24 billion
- Globally, 29 events each resulted in an overall loss of \$1 billion or more

Hurricanes and wildfires cause high losses  
Global losses from natural disasters in 2018



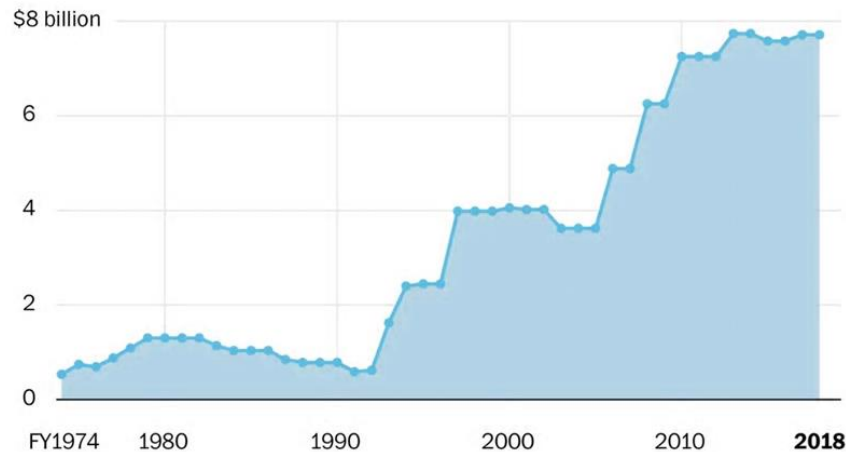
Munich Re

Source: Munich Re NatCatSERVICE

# Scrutiny on Federal Disaster Spending

## Disaster-relief appropriations, 10-year rolling median

Federal Disaster Relief Fund appropriations, adjusted for inflation; medians are for the decade ending in each fiscal year



Source: Congressional Research Service; Labor Dept. (inflation)

THE WASHINGTON POST

The Heritage Foundation

## BACKGROUND

No. 3380 | FEBRUARY 4, 2019

### Congress Must Stop the Abuse of Disaster and Emergency Spending

Justin Bogie

#### Abstract

The current disaster-and-emergency declaration and spending process is broken, leaving the government unprepared to respond to both widespread and localized disasters. Since the passage of the Stafford Act in 1988, which automatically triggers federal assistance when the President declares a disaster or emergency, the number of emergency declarations has been on the rise. Increasingly, Congress has been using disaster and emergency funding to evade spending caps and increase unrelated spending. Congress has only paid for a small percentage of this new “emergency” spending by offsetting spending reductions, adding to the nation’s growing federal debt. The federal government and local jurisdictions must do a better job of preparing for unforeseen natural disasters, as well as those occurring with predictable frequency, before they happen instead of relying on federal government bailouts afterwards. By reforming the disaster-response and declaration process now, Congress can ensure a better and more cost-effective response the next time a disaster strikes.

#### KEY POINTS

- The current disaster-and-emergency declaration and spending process is broken, leaving the government unprepared when major unforeseen disasters, or natural disasters that occur with predictable frequency, strike.
- Since the passage of the Stafford Act in 1988, the number and cost of declared disasters and emergencies has increased sharply.
- Congress has used disaster and emergency declarations to evade spending caps and increase

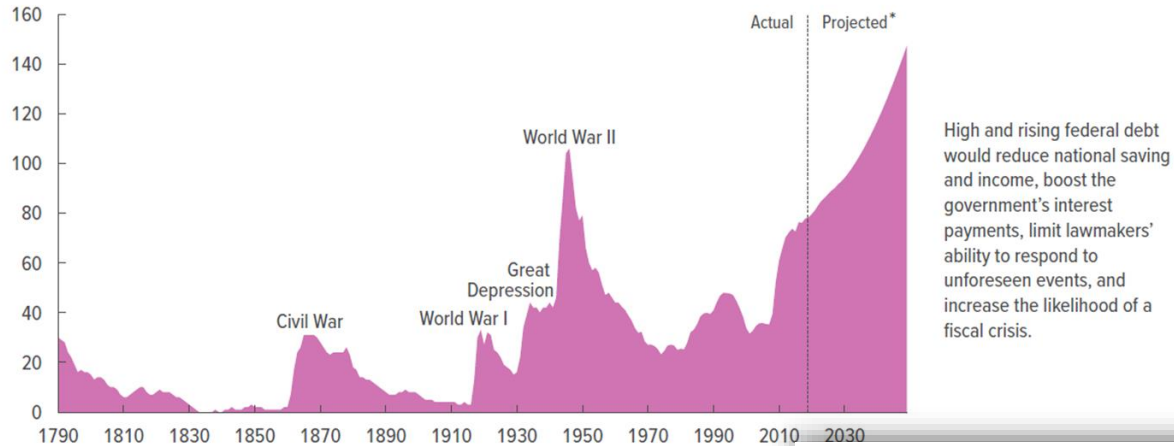


FEMA

# Federal & State Fiscal Pressures

## Federal Debt Held by the Public

Percentage of Gross Domestic Product



High and rising federal debt would reduce national saving and income, boost the government's interest payments, limit lawmakers' ability to respond to unforeseen events, and increase the likelihood of a fiscal crisis.

Source: Congressional Budget Office.

The extended baseline generally reflects current law, following CBO's 10-year baseline budget projection and the concepts underlying those baseline projections for the rest of the long-term period (in this case, through 2030).

By John Kennedy  
GateHouse Capital Bureau



Posted Apr 15, 2019 at 2:01 AM

## Catastrophes that rocked Florida last year are complicating efforts to finalize state spending plan

TALLAHASSEE — Disasters that rocked Florida last year are now complicating efforts to finalize a new state spending plan, with Hurricane Michael recovery and work to ease toxic water outbreaks commanding a huge share of the \$90 billion budget.

As a result, money for schools is tight. Some hospitals are facing cuts.

And even the tax-break package the Republican majority traditionally touts has been downsized to make money available for environmental work across the state and rebuild the devastated eastern Panhandle.

But with some \$2.5 billion certain to be committed to last year's twin disasters, some still wonder, is it enough?







# The DRRRA and FEMA's Strategic Plan

# Goal 1: Reducing Disaster Risk



## DRRA Section 1206 – Code Administration and Enforcement

- Amends Stafford Act Sec. 402 to authorize assistance to State and local governments for building code and floodplain management ordinance administration and enforcement
- Amends Stafford Act Sec. 406 to make eligible base and overtime wages for extra hires for enforcement of adopted building codes for 180 days

## DRRA Section 1234 – BRIC

- Expands eligible projects
- Allows for code adoption and implementation as an eligible activity
- Extent of building codes is a factor for projects
- Also considers capability and capacity building

## DRRA Section 1235(b) – Consensus-Based Codes and Standards

- Authorizes FEMA to provide Public Assistance funding to replace and restore disaster damaged facilities to the latest published editions of relevant consensus-based codes and standards to ensure that facilities are restored in a manner that allows them to be “resilient”

## DRRA Section 1241: Post-Disaster Building Safety Assessment

- Directs FEMA to develop guidance for building experts to use when they assess structures for safety after a disaster



FEMA

# Hazard Mitigation Saves - National Institute of Building Sciences

## Natural Hazard Mitigation Saves:

### 2019 REPORT

Compilation of latest findings on retrofit strategies with:  
*Natural Hazard Mitigation Saves: 2018 Interim report*  
*Natural Hazard Mitigation Saves: Utilities and Transportation Infrastructure*  
*Natural Hazard Mitigation Saves: 2017 Interim Report*

#### **BCRs for Mitigation Strategies Studied**

(from Highest to Lowest)

- Adopting Model Codes Saves \$11 per \$1 Spent
- Federal Mitigation Grants Save \$6 per \$1 Spent
- Private-Sector Building Retrofit Saves \$4 per \$1 Spent
- Exceeding Codes Saves \$4 per \$1 Spent
- Mitigating Infrastructure Saves \$4 per \$1 Spent

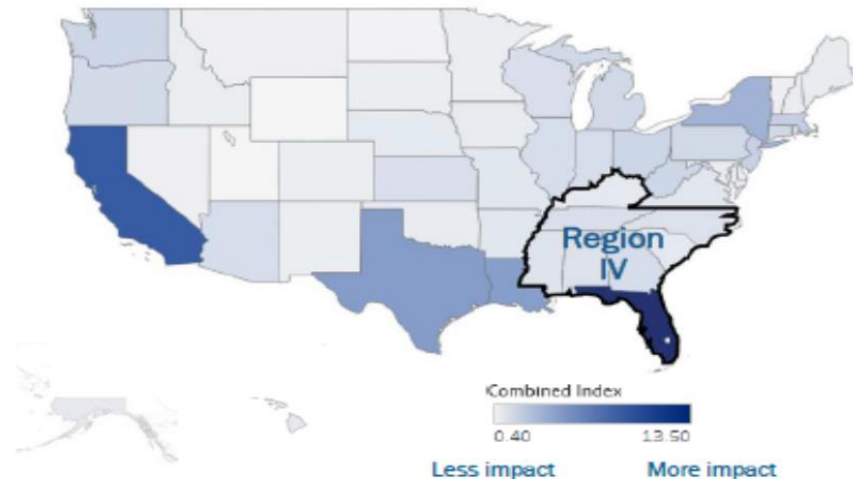


FEMA

# FEMA Building Codes Saves - Phase 2 – Regional Study

## Incentivize adoption and enforcement of hazard-resistant building codes nationally

Relative Impact to States for Adopting Model Building Codes<sup>b</sup>



<sup>a</sup> Based on FIMA's 2012 Losses Avoided Study, adjusted to 2015 dollars. This estimate does not include lives saved, decreased business interruption or other unaccounted for benefits. The value is expected to increase over time as more of the building stock transitions to model codes and older structures are removed.

<sup>b</sup> State Building Code Enforcement Grading Schedule (BCEGS) scores combined with Average Annual Loss estimates to create a relative impact index. States with low impact values will still benefit from codes.

<sup>c</sup> Average annual losses avoided nationwide. This number is an estimate. A nationwide losses avoided study is needed to get a more precise figure.

### Saves a billion?

Probably- Based on the FIMA-led Losses Avoided Study, **Region IV's** average annual losses avoided from adopting building codes is **\$532 M.**<sup>a</sup>

What might it save us nationally?

Combining the states'

- hazard risk and
  - building code adoption and enforcement,
- we determine how Region IV compares to the rest of the country and estimate losses avoided of:

**\$1.25 B–\$2.06 B annually.**<sup>c</sup>

# Risk Rating 2.0

## What are the benefits of Risk Rating 2.0?

The NFIP is developing Risk Rating 2.0 to deliver the following key benefits to policyholders, communities, and the flood insurance industry:



Creates an individualized picture of a property's risk



Provides rates that are easier to understand for agents and policyholders



Reflects more types of flood risk in rates



Uses the latest actuarial practices to set risk-based rates



Reduces complexity for agents to generate a quote

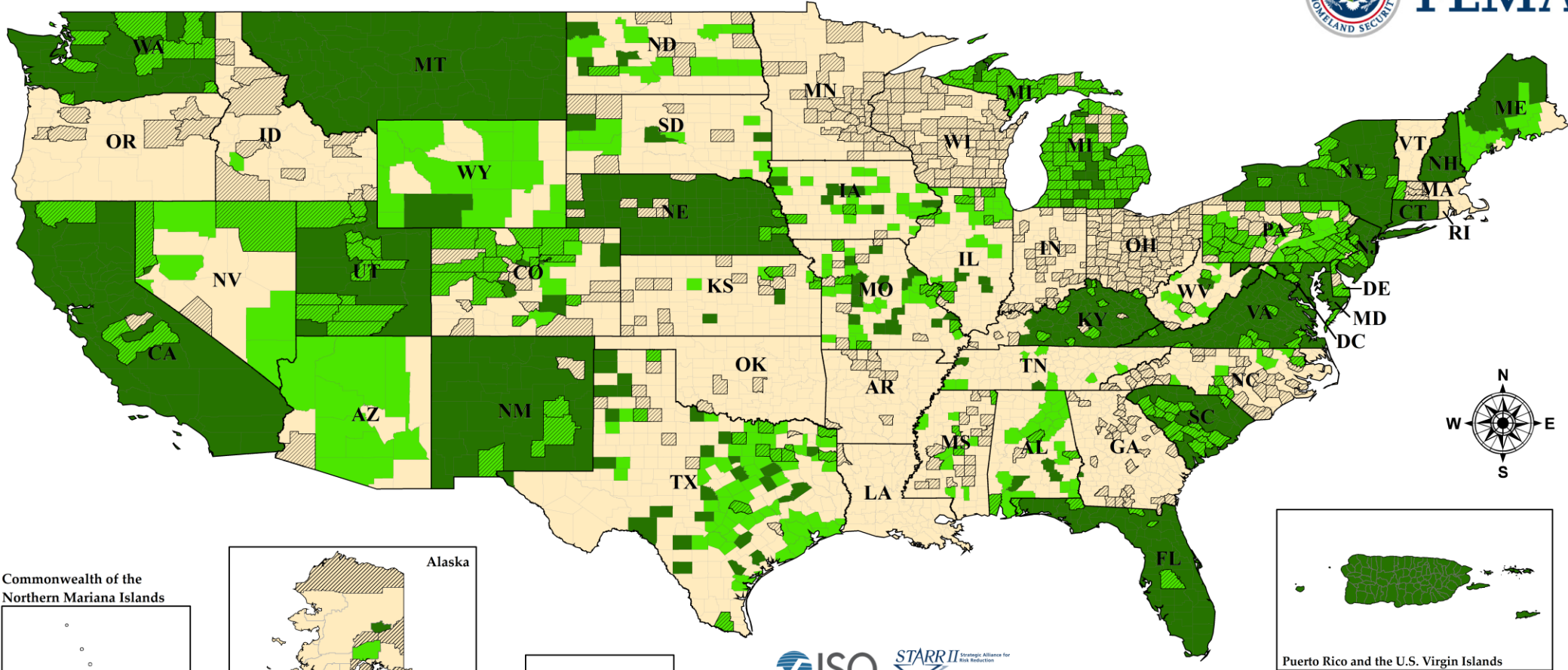


# Adoption of Hazard-Resistant\* Building Codes

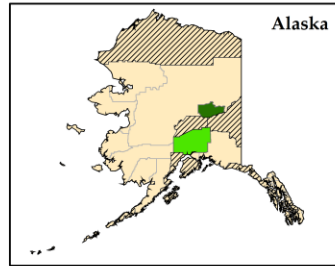
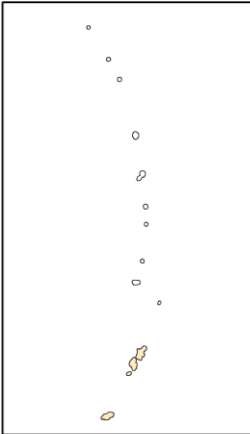
December 31, 2019



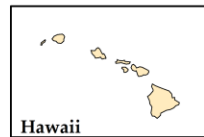
FEMA



Commonwealth of the Northern Mariana Islands



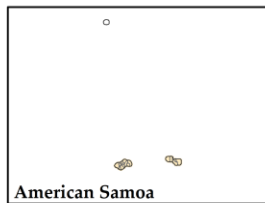
Alaska



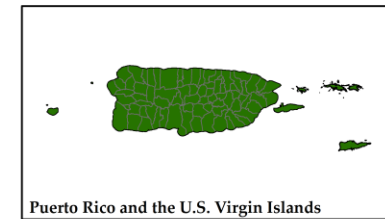
Hawaii



Guam



American Samoa



Puerto Rico and the U.S. Virgin Islands



## Hazard Risk

Reporting jurisdictions which are at high risk for hurricane, flood, seismic, damaging wind, and/or tornado

\*A jurisdiction is considered hazard-resistant if: (1) it or its State has adopted, as mandatory, any combination of the 2015 or 2018 IBC and IRC, without weakening any of the provisions related to hazards for which the jurisdiction is at high risk, and (2) the jurisdiction participates in the NFIP when having high risk to flood.

Jurisdictions are known locations which may have participated in the BCEGS survey done by ISO or provided by building code adoption tracking research. Jurisdiction is the common name for the area, with defined political boundaries, served by the building department. Jurisdictions include, but are not limited to, cities, towns, townships, boroughs, villages, counties, and parishes. Many small crossroad communities are counted as jurisdictions.

A county may contain other jurisdictions which do not report building code adoption information through ongoing survey responses. The hazard-resistant status of such jurisdictions is unknown, and therefore not reflected in this map. Contact your local jurisdiction to determine the particular building code and latest amendments to the building code.

## Hazard Resistance for At-Risk Counties using the 2015 or later IBC/IRC

- 100% of reporting jurisdictions within the county have adopted hazard-resistant building codes and all jurisdictions with high flood risk participate in the NFIP
- 0.1% to 99.9% of reporting jurisdictions within the county have adopted hazard-resistant building codes and all reporting jurisdictions with high flood risk participate in the NFIP
- 0.1% to 99.9% of reporting jurisdictions within the county have adopted hazard-resistant building codes and at least one reporting jurisdiction with high flood risk does not participate in the NFIP
- 0% of reporting jurisdictions within the county have adopted hazard-resistant building codes and all reporting jurisdictions with high flood risk participate in the NFIP
- 0% of reporting jurisdictions within the county have adopted hazard-resistant building codes and/or at least one reporting jurisdiction with high flood risk does not participate in the NFIP

Based on BCEGS data provided by Insurance Services Office (ISO), December 31, 2019, or other research groups

# New Building Science Resources & Coming Attractions...

- **Reducing Flood Losses Through the International Codes** (5<sup>th</sup> Edition, Oct. 2019)
- **Hurricane Michael Mitigation Assessment Team Report** (Fall 2019)
- **Building Codes Save: A Nationwide Study of Loss Prevention** (Spring 2020)
- **Hurricane and Flood Mitigation Handbook for Public Facilities** (Spring 2020)
- **NFIP Technical Bulletins** (additional releases in 2020)
- **EMI Advanced Building Science Concepts Series** (Spring 2020)

**Updated Guidance Now Available**  
for NFIP Building Performance Requirements

**National Flood Insurance Program (NFIP) Technical Bulletins provide guidance** for complying with the NFIP's building performance requirements. The bulletins help state and local officials interpret the NFIP regulations and are also useful resources for homeowners, insurance agents, building professionals, and designers.

**User's Guide to Technical Bulletin**  
Developed in Accordance with the National Flood Insurance Program  
NFIP Technical Bulletin 0 / July 2019  
FEMA

**Elevator Installation**  
For Buildings Located in Special Flood Hazard Areas  
In Accordance with the National Flood Insurance Program  
NFIP Technical Bulletin 4 / June 2019  
FEMA

**Corrosion Protection for Metal Connectors and Fasteners in Coastal Areas**  
In Accordance with the National Flood Insurance Program  
NFIP Technical Bulletin 8 / June 2019  
FEMA

**FEMA is currently in the process of updating all 12 technical bulletins.**

**Three revised technical bulletins are now available:**

- TB 0:** The technical bulletin **user's guide**
- TB 4:** NFIP regulations concerning the **installation of elevators** below the Base Flood Elevation in Special Flood Hazard Areas
- TB 8:** Guidance on **corrosion-resistant metal**

**Look for additional technical bulletin updates in the coming months!**



FEMA





# FEMA

[www.fema.gov/drra](http://www.fema.gov/drra)

<https://www.fema.gov/building-science>

[FEMA-Buildingsciencehelp@fema.dhs.gov](mailto:FEMA-Buildingsciencehelp@fema.dhs.gov)  
Building Science helpline (866) 927-2104