Resilience Incentivization Roadmap 2.0

Webinar

October 18, 2023

National Institute of BUILDING SCIENCES™

About NIBS

- NIBS is an independent non-profit, non-governmental organization that supports advances in building science and technology
- It was established by Congress in 1974 to serve as an independent and trusted building science organization, and an interface between government and the private sector.

About the Project

- The purpose of the study is to promote the partnership between the public and private sector in incentivizing resilient behavior.
- This study offers a roadmap for implementing resilience incentives with the goal to make communities better prepared for the devastating effects of natural disasters.

Presenters

- Dr. Keith Porter, Chief Engineer at the Institute for Catastrophic Loss Reduction
- Dr. Sean Becketti, Principal at Elliott Bay Analytics
- Sean Kevelighan, President and Chief Executive Officer at the Insurance Information Institute
- Jeff Dunsavage, Senior Research Analyst at the Insurance Information Institute

Mitigation saves, theoretically. Can incentivization catalyze practice?

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Keith Porter, Institute for Catastrophic Loss Reduction

A new way to promote resilience investment

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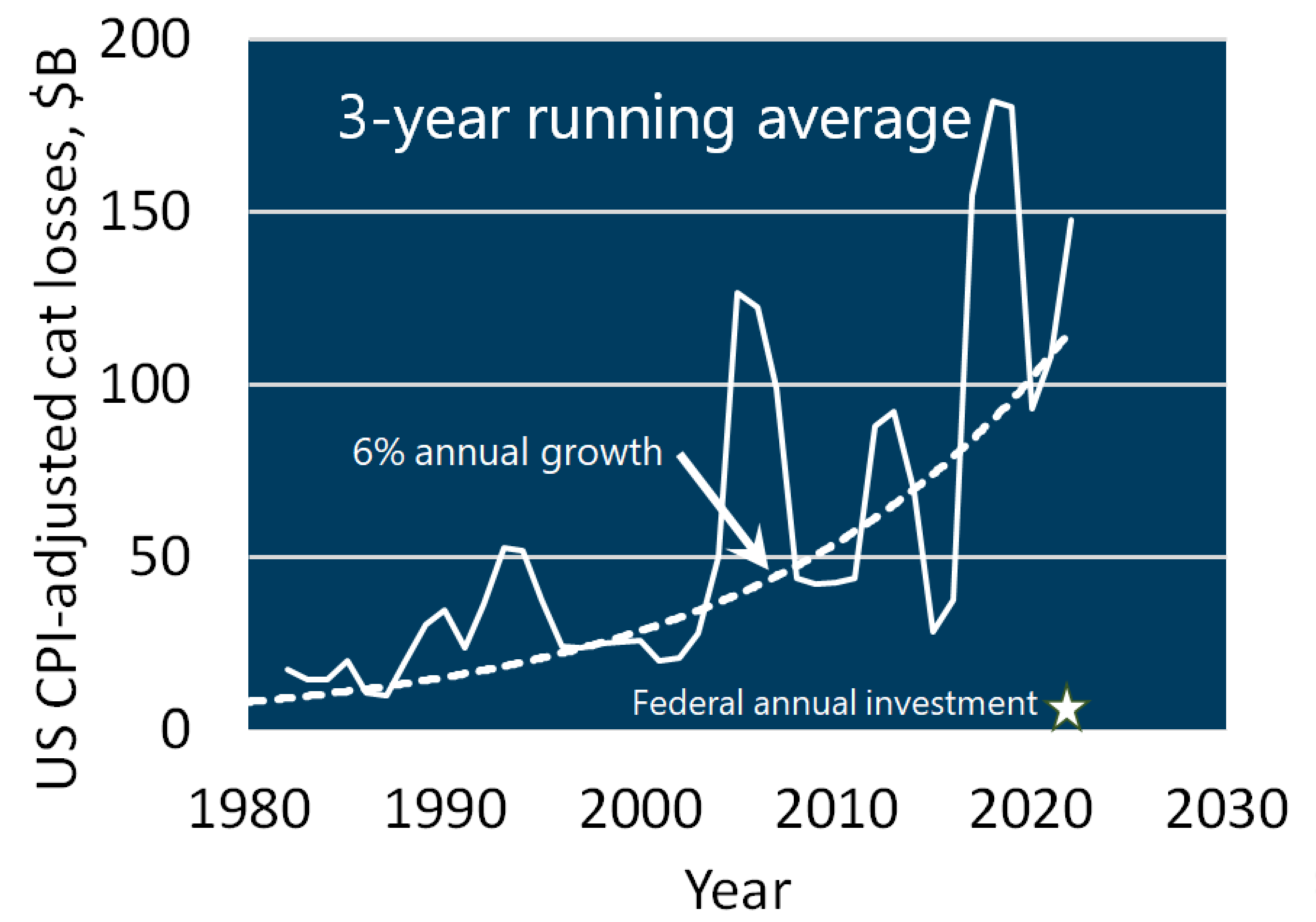
The growth should frighten us

$120B/year
= 8% of construction GDP
= 4 weeks of construction

+6%/year
= 2x every 12 years
= 10x pop growth
= 2x GDP growth



Mitigation saves. Why don’t we do it?

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1. Mitigation imposes costs on some and benefits others

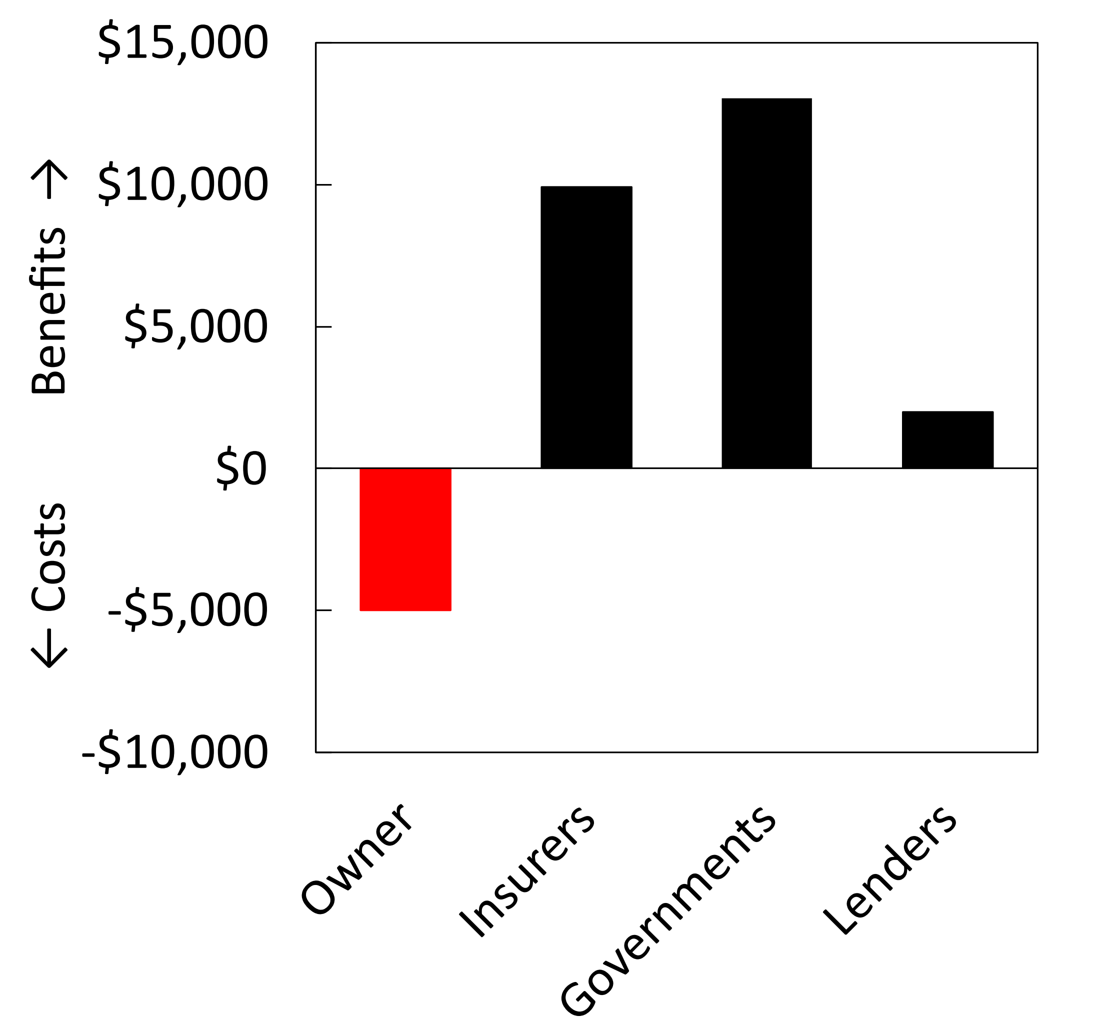
Retrofit cost = $5,000

Total benefit = $25,000

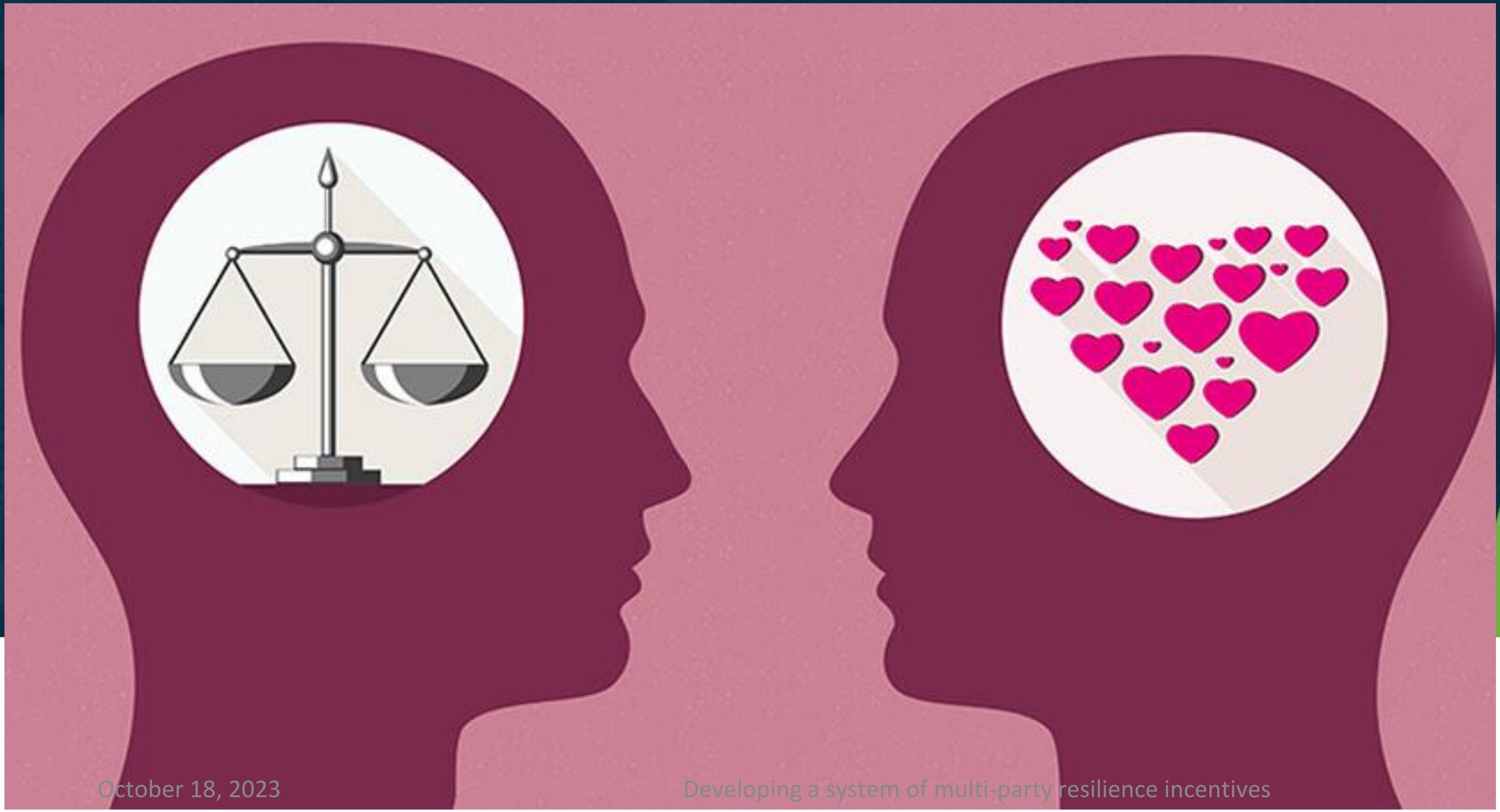
Societal benefit-cost ratio = 5:1

Insured owner's benefit ≈ $0

Insured owner's benefit-cost ratio = 0



2. Emotion can outweigh facts and logic



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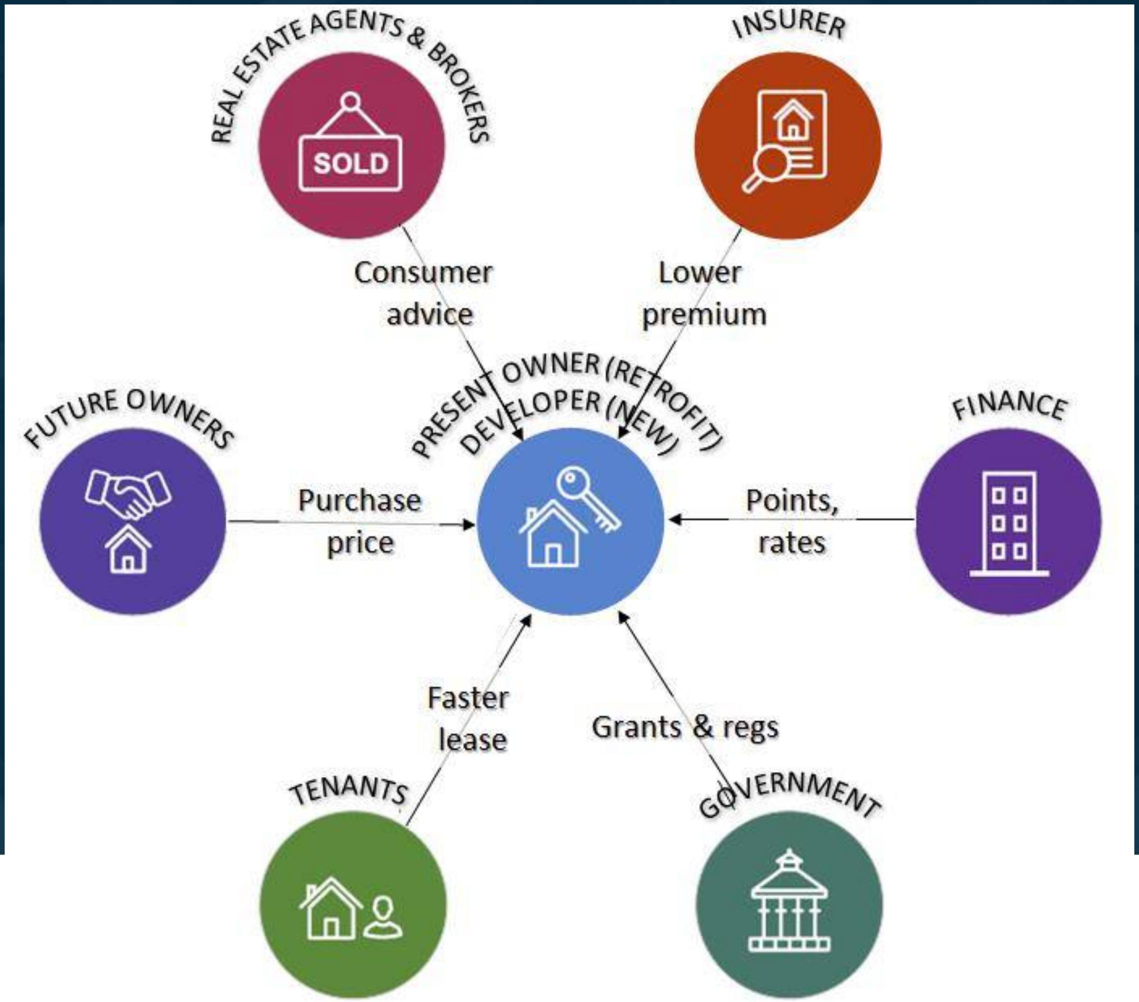
3. Co-beneficiaries rarely collaborate for resilience



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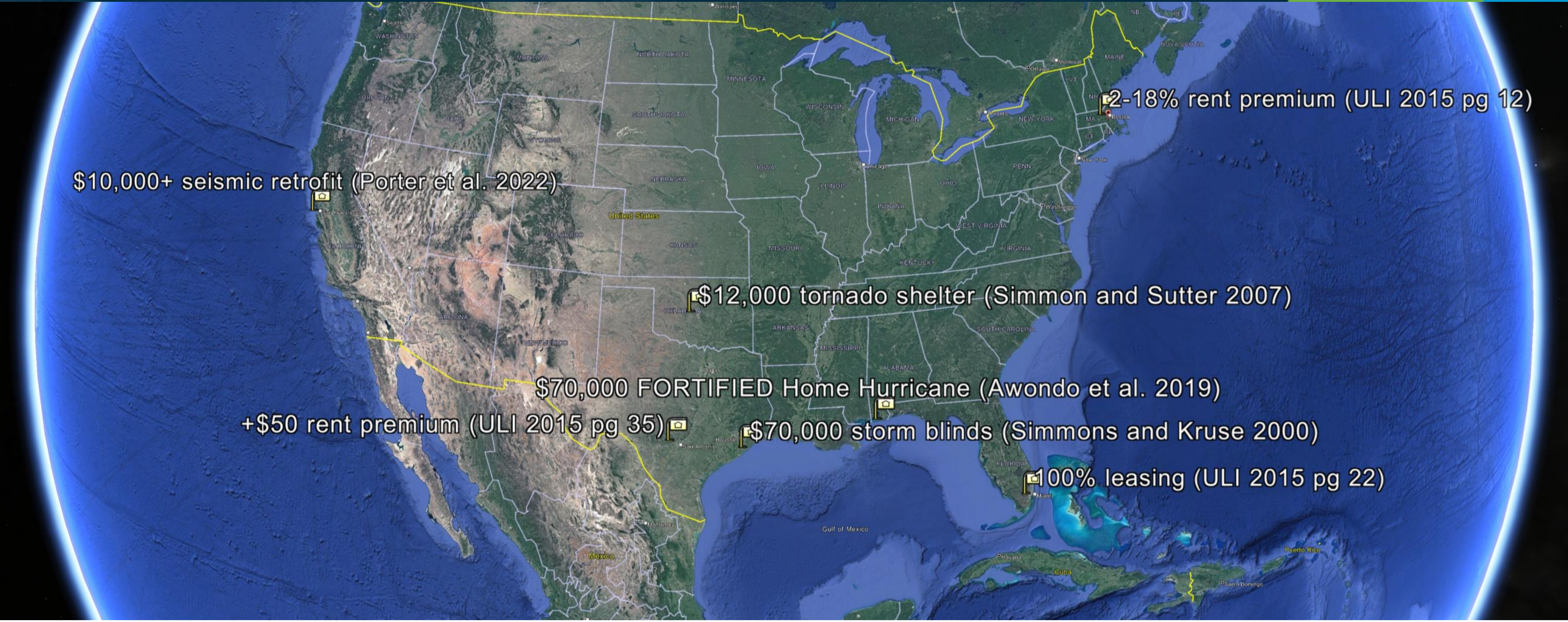
Cities help pay for basement flood protection

Higher resale & rental value, faster leasing



Coordinated monetary incentives can align stakeholder interests

	Cost	Benefit	BCR
Owner	$0	?	
Insurers	$2,000	$10,000	5
Government grants	$2,600	$13,000	5
Lenders	$400	$2,000	5
Sum	$5,000	$25,000	5

Our solution:

A community of co-beneficiaries, supporting owners' resilience efforts

Sets of appropriate, standardized mitigation measures

Offered in persuasive ways

Three ingredients for a pilot test

Community with a program

A clearly defined measure

2+ additional offerers

Homeowners, developers, financial services, investors, and realtors

Sean Becketti

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Where we started

- **Problem:** Externalities contribute to underinvestment in resilience
  - Homeowners (or developers) bear cost of resilience investments, but others share the benefits
  - This study focuses on the example of flood risk, but lessons learned can be applied to risk of other natural disasters

- **Solution:** Design incentives that co-beneficiaries can offer homeowners/developers to increase investment in resilience
  - Potential co-beneficiaries include insurers, lenders, securitizers, real-estate investors, real estate agents, communities and government
  - Properly-designed incentives can be win-win
    - Example: Insurer discounts premiums for resilient homes in exchange for reduced risk of flood damage
  - Proposed incentives should lead to pilot projects to confirm effectiveness

Homeowners and developers are the decision makers

- **Challenges for homeowners**
  - Modest financial incentives from multiple co-beneficiaries may not have the same impact as a single significant incentive.
  - Behavioral incentives are important to overcome homeowner uncertainty
    - Homeowners are uncertain about the risk of a flood, about how long they will own their home, about the most appropriate resilience investments and about the best devices and materials and the most competent installers

- **Challenge for developers**
  - Many developers believe home buyers are unwilling to pay for above-code resilience investments.

Designing financial incentives

- Win-win incentives depend on extended periods of significant co-beneficiary risk
  - Portfolio lenders and securitizers face risk of delinquencies and default for the life of the mortgage.
  - In contrast, securitizing lenders face risk for less than a month (i.e., until they sell the mortgage)
  - Insurers face risk in year-long increments

- Incentives are simpler to implement when co-beneficiaries interact directly with the homeowner or developer
  - Securitizers can have significant impact on the mortgage market but do not interact directly with homeowners
  - Communities interact directly with developers of new subdivisions, thus can negotiate deals to insure inclusion of resilience features

Where we ended: Hybrid approach

- Top 3 financial incentive proposals
  - **New construction:** Communities with elevated flood risk negotiate reduction in development impact fees in exchange for inclusion of resilience investments in new homes
  - **Retrofitting:** GSEs purchase home equity loans that finance resilience investments
  - **Overall:** Government tax incentives for resilience investments

- Non-financial incentive proposals
  - **Certification:** Convene stakeholders to design a certification program for flood resilience investments (analogous to existing programs for wind risk)
  - **Public awareness/education programs:** To increase homeowner awareness of existing flood risk and to reduce uncertainty about appropriate resilience investments

- Additional proposals
  - List of additional ideas proposed in report

Insurance

Sean Kevelighan & Jeff Dunsavage

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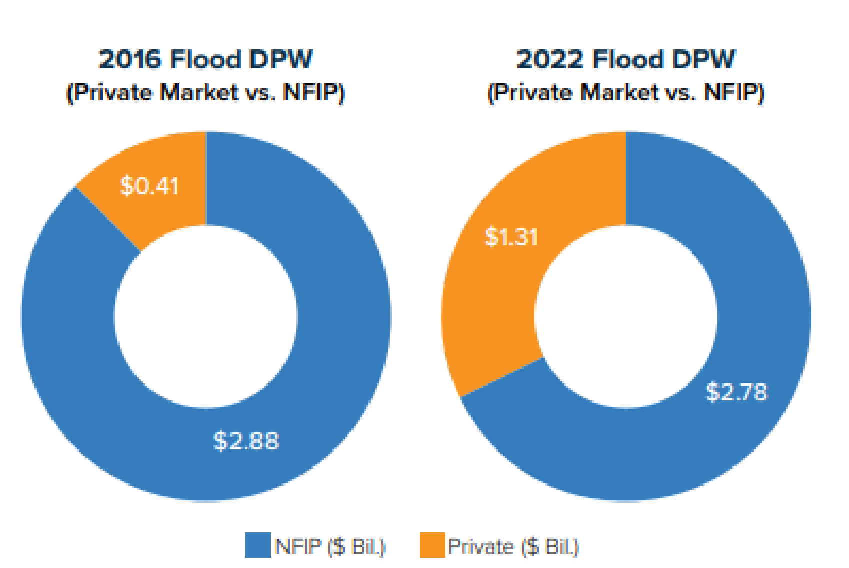
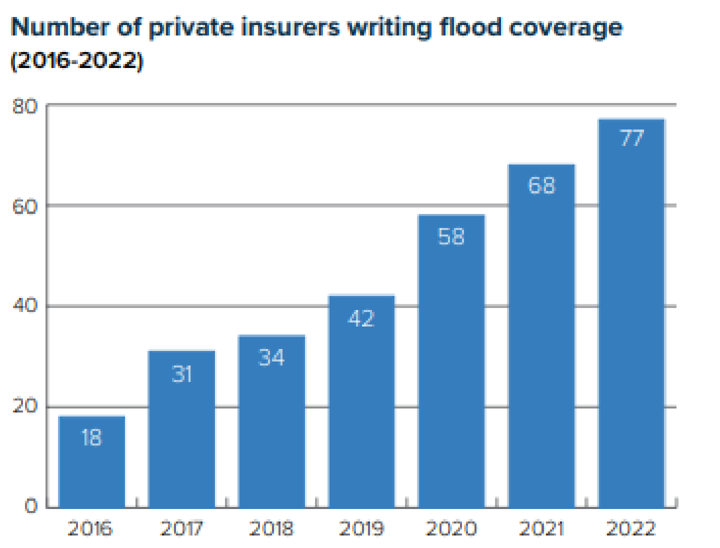
Insurers Are Motivated…

P/C insurers have strong incentives to encourage risk-reducing improvements.

Flood insurance DPW in 2016 was $3.29 billion, with less than 13% written by 18 private insurers. By 2022, total flood DPW was over $4 billion, with over 32% written by 77 private insurers.

The private market recognizes the potential in flood.





Source: S&P Global Market Intelligence, as of July 2023.

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…But Homeowners Outside FEMA Flood Zones Are Not

Outside FEMA-designated flood zones, flood insurance purchases remain low. With **more than 20%** of NFIP claims coming from outside high-risk flood areas, the NAIC advises homeowners who live in areas with low-to-moderate flood risk to consider flood insurance.

U.S. residential flood insurance market is roughly $4 billion, but Milliman estimates total potential market at between $37 billion and $47 billion. They cite **"relative lack of consumer demand"** as being at the root of the insurance gap.

Top Consumer Reasons for Not Buying Flood Insurance

- Erroneous belief that flood is covered under standard homeowners' insurance;
- If mortgage lender doesn't require flood insurance, it must not be necessary;
- It's too expensive.

Consumer and community education on flood risk and the role of mitigation in insurance pricing is key to driving flood insurance availability and affordability.

Insurance Pricing Must Reflect Risk

"Risk-based pricing" means offering different prices for the same coverage, based on risk factors specific to the insured person or property. Without it, lower-risk policyholders would subsidize higher-risk ones.

Any program that depends on insurance premium discounts must **measurably reduce the risk** being assumed by participating insurers.

Existing Models

FEMA's Community Rating System: Voluntary program that encourages community floodplain management that exceeds NFIP requirements. Premium rates are discounted to reflect reduced flood risk from community efforts. Discounts range from 5% to 45%.

Strengthen Alabama Homes: Provides grants up to $10,000 to homeowners to upgrade them to IBHS FORTIFIED standard. Funding comes from the insurance industry in Alabama. Insurers are mandated to offer discounts as high as 55%.

Louisiana Fortify Homes Program – modeled after Alabama program – will provide up to $10,000 in grants for eligible homeowners to meet IBHS FORTIFIED roof standard. Lawmakers also passed legislation to require insurers to provide actuarially justified discounts.

California Earthquake Authority provides $3,000 grants to subsidize seismically retrofitting houses. Additional grants available for low-income homeowners. Insurance premium discount of up to 25%.

Non-traditional programs like one in NYC that incorporates parametric insurance. Supports resilience by getting money into citizens' hands quickly.

Key Needs

The models and insurance tools exist, and the insurance industry is engaged in implementing them. What's needed is:

- Consumer and community understanding of flood risk and the importance of hazard mitigation in ensuring available, affordable coverage;
- Programs that measurably reduce flood risk;
- Greater private insurer involvement in demonstration projects.

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Partnership and Collaboration

Dr. Jiqiu (JQ) Yuan, PE, PMP

Vice President of Engineering
National Institute of Building Sciences (NIBS)

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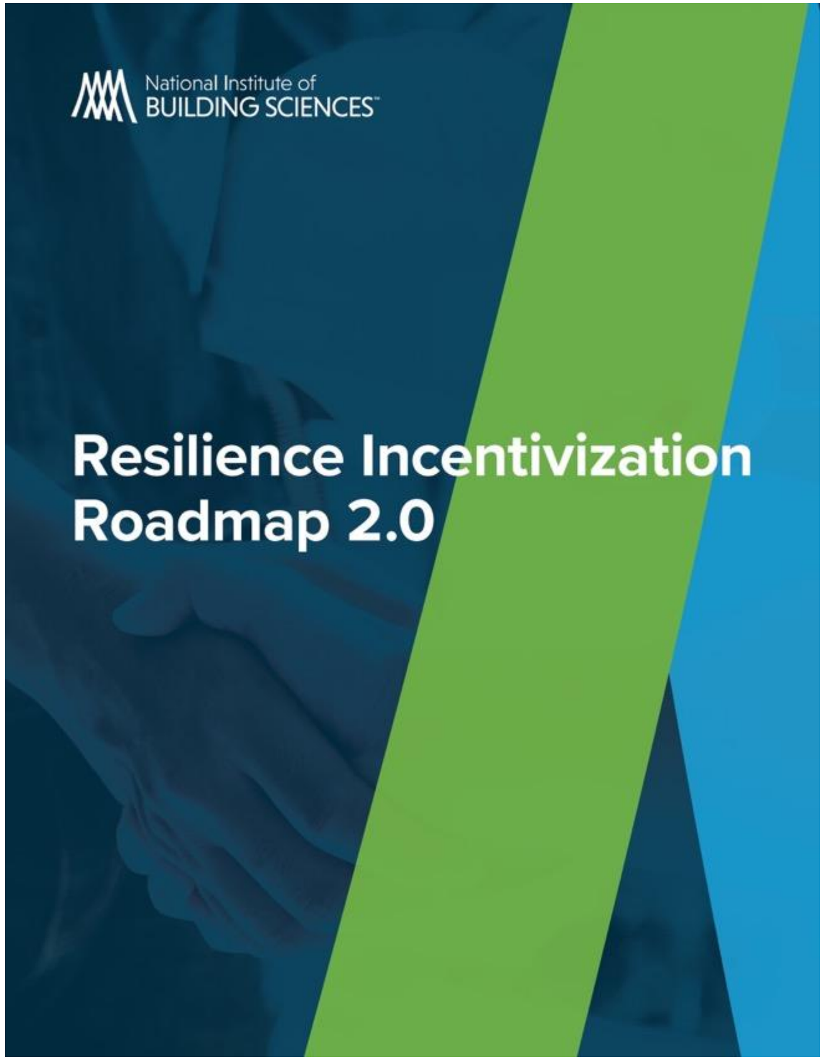

- Chapter 1: Background and Approach
- Chapter 2: Technical and Business Case for Resilience
- Chapter 3: Roadmap to the Technical and Business Case
- Chapter 4: What Developers Need
- Chapter 5: Role of Insurers
- Chapter 6: Finance and Investor Incentives
- Chapter 7: Real Estate Agents
- Chapter 8: Government, Public Assistance and Policy
- Chapter 9: Conclusions, Recommendations, and Next Steps

Resilience Incentivization Roadmap 2.0

- **Motivation**
- **Mechanism**
- **Opportunities**

Resilience Incentivization Roadmap 2.0

- **Motivation**

✓ Protecting people

✓ Lower Response Cost

✓ Stable economy and tax base

✓ Greater job opportunity

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- **Mechanisms**

✓ Mitigation grants

Building Resilient Infrastructure and Communities (BRIC, $2.295B FY22), Hazard Mitigation Grant Program (HMGP, $3.46B one-time investment in 2021), Community Development Black Grants (CDBG), STORM Act, Flood Mitigation Assistance (FMA), National Coastal Resilience Fund (NCRF), National Flood Risk Management Program/Silver Jackets, State and Local programs….

✓ Tax incentives

SHELTER Act, Louisiana, Alabama, California…

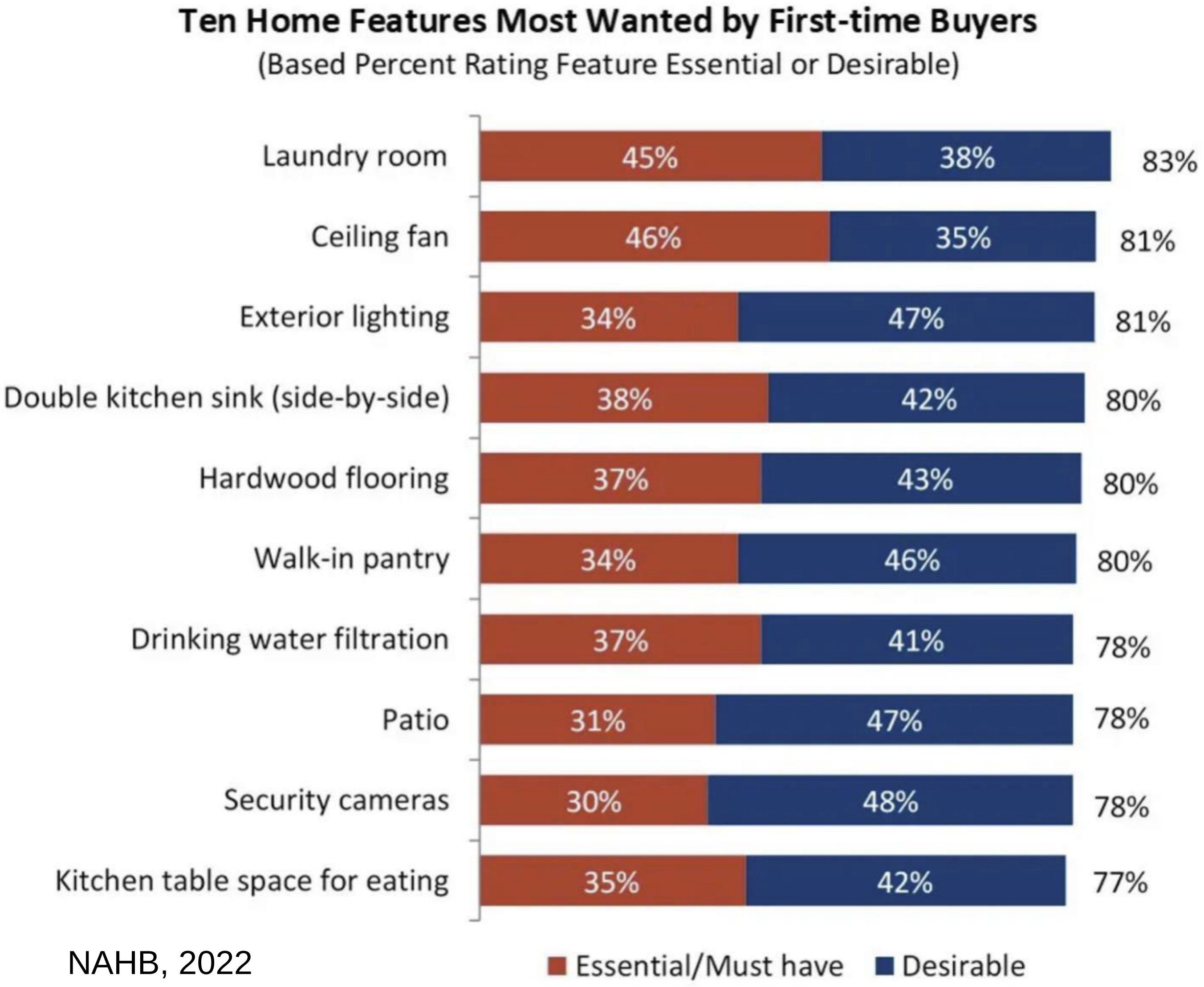
✓ Development impact fees

Chicago, San Francisco, Alaska…

Public Awareness

- **Do the consumers know the options?**

- **Does the market reflect the added value of resilient buildings?**



NAHB, 2022

Public Awareness

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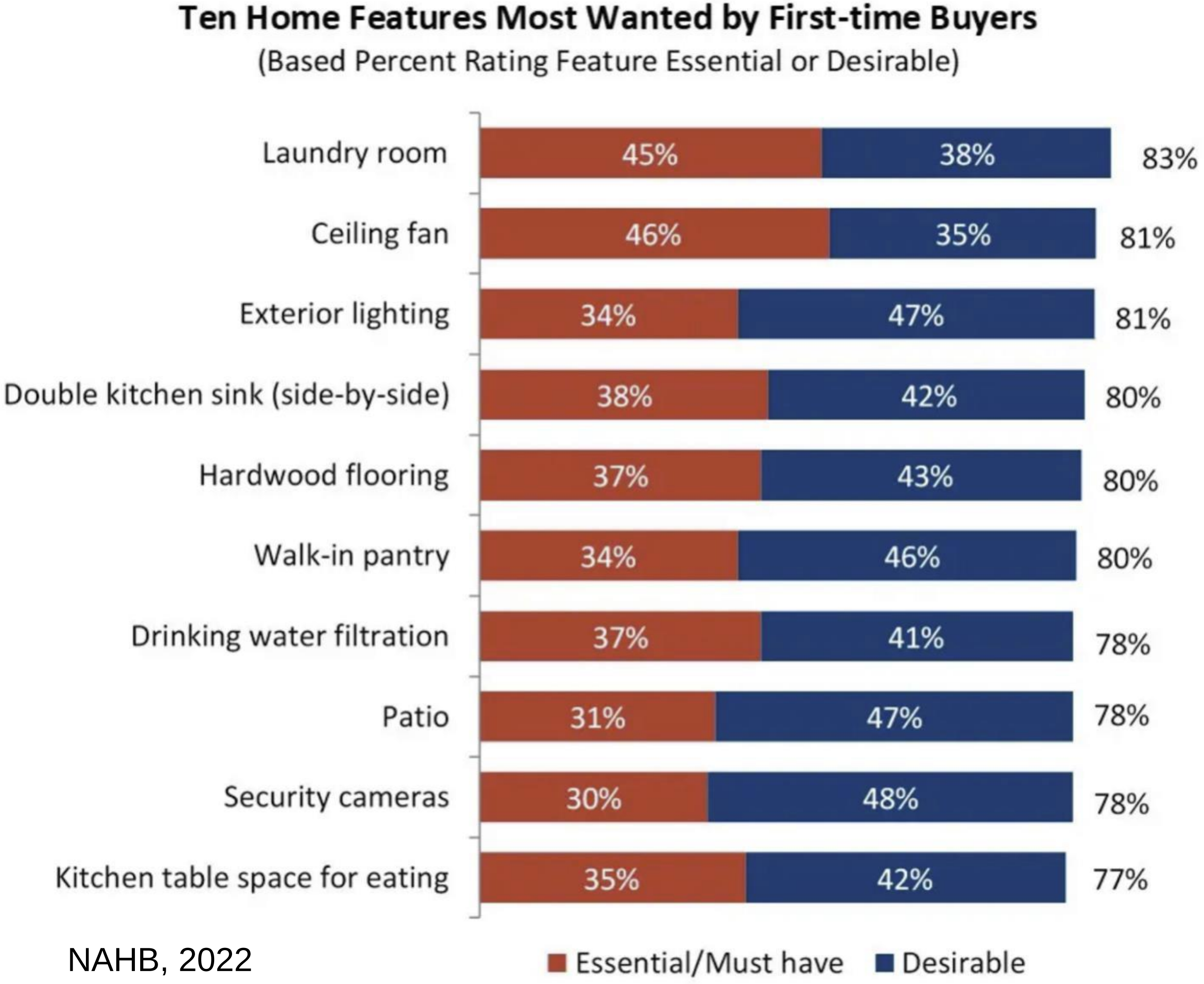
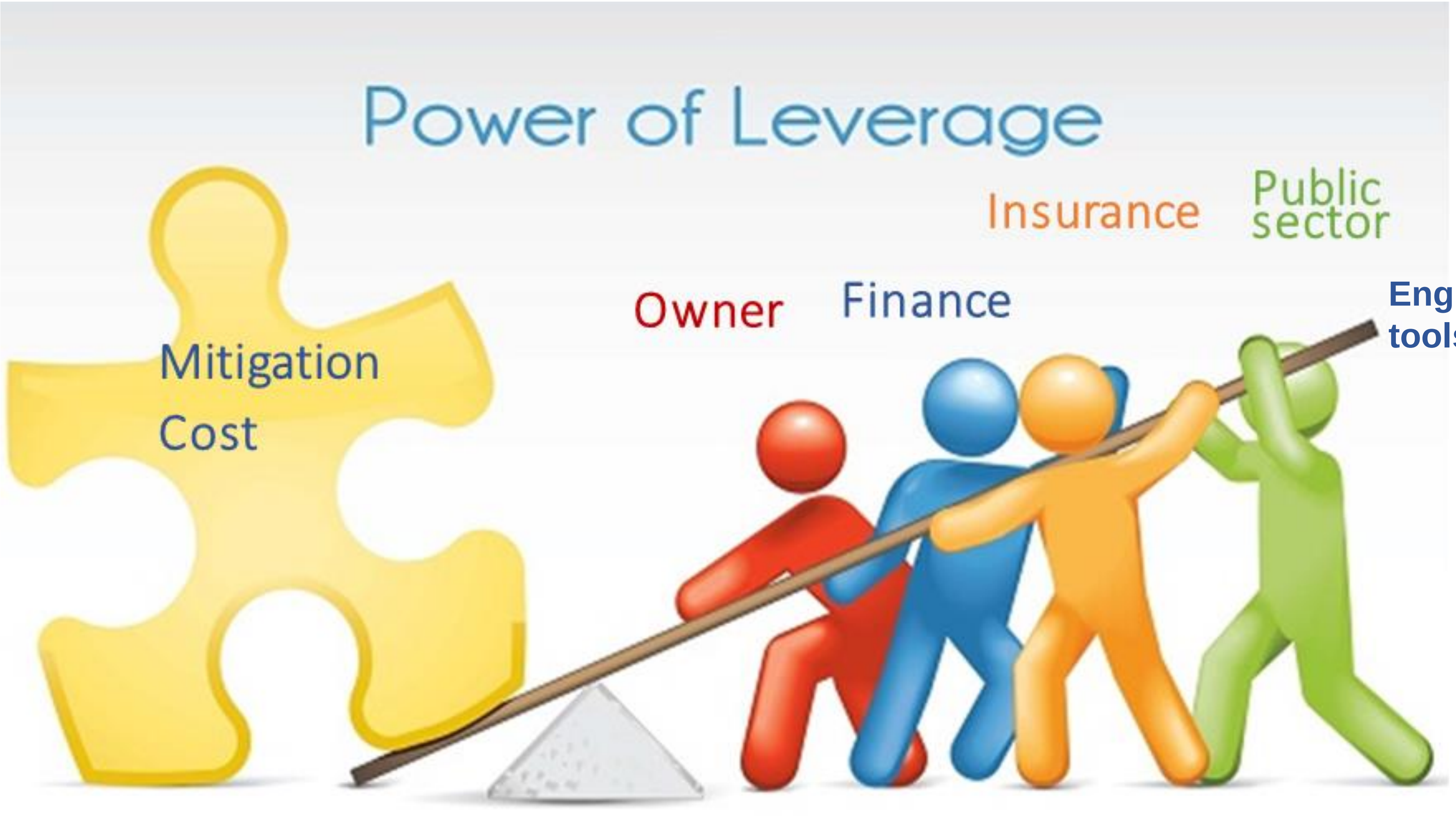


NAHB, 2022

Partnership and Collaboration



Engineering tools

TURBOGRANTS™

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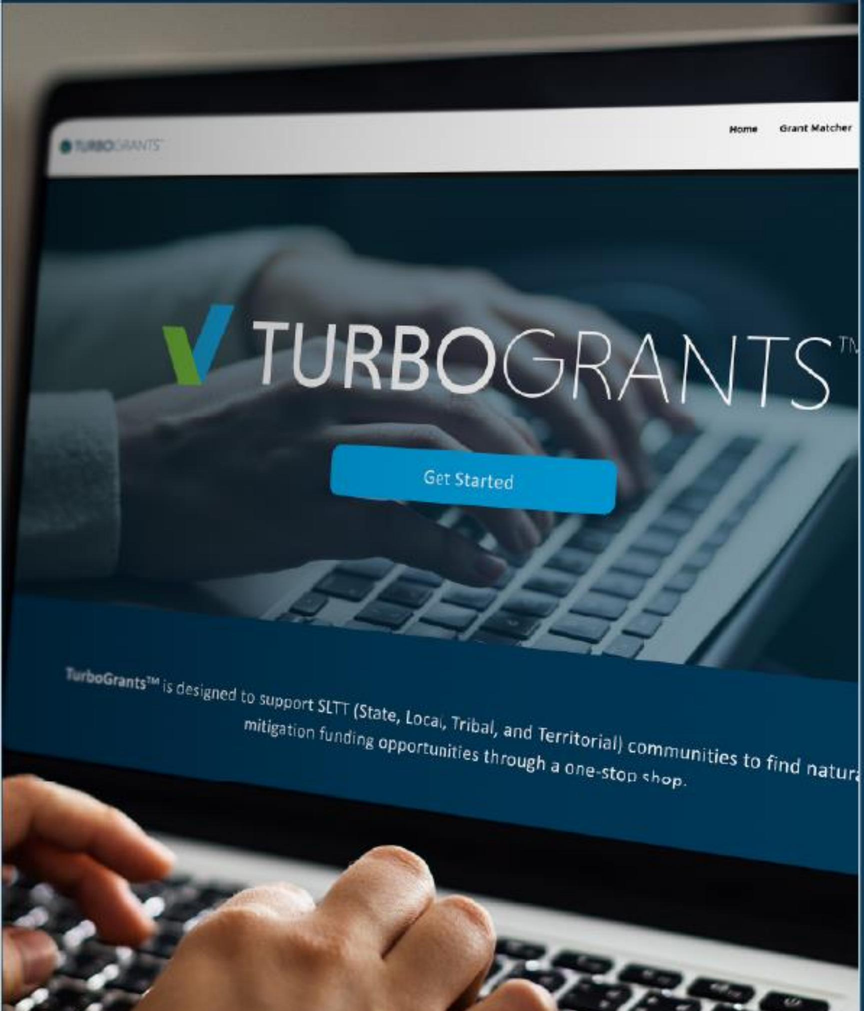
Let's Get Started



Grants Match

TurboGrants™ matches funds to the problem that needs solving.

All hazards. All agencies.

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A National Institute of Building Sciences Initiative
SEARCH

HUD CDBG
90% Match

FEMA BRIC
95% Match

HUD HMGP
89% Match

More...

Funding for Mitigation and Resiliency Goals

EPA WIFIA
92% Match

DOE IIJA
85% Match

SBA Loan
90% Match

Technical Assistance

TURBOGRANTS™

Live experts can help.

Need application assistance?

Question about a grant?
Question about eligibility?
Question about application process?
Connect with an agency contact?

Speak with a grants expert.

Need technical assistance?

Benefit cost analysis?
Community risk?
Mitigation options?
Direct technical assistance?
Connect with professional service?

Speak with a technical expert.

THANK YOU

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MMC/CFIRE

Working together to incentivize resilience

If you’re a lender, we want to work with you to explore financial products that support resilient buildings.

If you´re an insurer, we want to work with you to promote insurance programs that reward safer structures.

If you´re a community leader, we want to work with you to develop Layered mitigation investment packages

If you´re a developer, an owner or buyer we want to work with you to properly evaluate risk and recognize values of resilient buildings. We want to lower the upfront mitigation costs by leveraging investments from both the public and private sectors.

If you´re a government administrator, we want to work with you to identify and coordinate different public mitigation assistance programs and leverage these with private investments.

If you’re an engineer, researcher, social scientist, emergency manager, policymaker, or stakeholder, we want to work with you to support guidelines and tools development and support community implementation.

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Thank you!

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