

END THE CYCLE OF DESTRUCTION:

THE U.S. SHOULD
INVEST MORE BEFORE
DISASTERS THROUGH A
NATIONAL MITIGATION
STRATEGY



October 19, 2015



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EXECUTIVE SUMMARY

On August 29, 2005, Hurricane Katrina made landfall in southeast Louisiana, killing 1,833 people and causing \$108 billion in property damage, making it the costliest natural disaster in United States history. Seven years later, Hurricane Sandy made landfall on the Atlantic coast of the United States, killing 233 people and causing \$68 billion in property damage, making it the second costliest hurricane in United States history. The two hurricanes struck different parts of the United States seven years apart and cost taxpayers \$176 billion, almost all of which was funded by *off-budget, ad hoc disaster payments*.

Hurricanes Katrina and Sandy further *revealed the need for the U.S. to reform* natural disaster spending policy by focusing on preventative disaster mitigation measures in order to save lives, dramatically prevent damage, and *reduce the cost of recovery to taxpayers*.

Limited post-disaster federal investments aimed at enhancing the nation's resilience have not significantly reduced states' overall risk exposure. Without a comprehensive federal strategy to enhance the nation's overall disaster resilience – with an emphasis on the homeowner — *the nation is exposed to a lower return on investment and a higher risk for later, post-disaster costs*.

In a recent report issued by the Government Accountability Office (GAO), 12 of the 16 states and cities surveyed said they *value efforts to enhance community resilience*, through measures such as state funding for mitigation, legislative efforts to strengthen building codes, and state offices focused on disaster resilience efforts. However, the federal government has instead *fostered a culture of unplanned, reactive post-catastrophe appropriations* that fail to incentivize state and local investment in pre-disaster risk reduction, providing fiscal support only after often-outdated state and local infrastructure has failed to withstand the force of a natural calamity.

The time has come for the federal government to reexamine the balance between pre-disaster and post-disaster mitigation spending.

With this report, the BuildStrong Coalition will:

- Expose the increasing number of federal disaster declarations and the cost of those declarations
- Examine the findings of two recently released reports that point to deficiencies in the current federal approach to disaster response and recovery
- Analyze natural disaster spending reform proposals before Congress
- Recommend a set of proposals that begin to constitute a National Mitigation Investment Strategy

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Cognizant of federal funding constraints, the BuildStrong Coalition has identified a funding source for this new investment strategy in the tens of billions of dollars in unspent, non-FEMA grant program funds established in the wake of Hurricane Sandy. Of the \$36.99 billion in non-FEMA funding designated to government programs in the Sandy Supplemental, only \$6.93 billion has been paid out.

The BuildStrong Coalition recommends investing \$1.265 billion of the \$30 billion in non-FEMA funds that have yet to be awarded to fund these mitigation efforts, which will *save lives, communities, and tens of billions of taxpayer money.*

INTRODUCTION

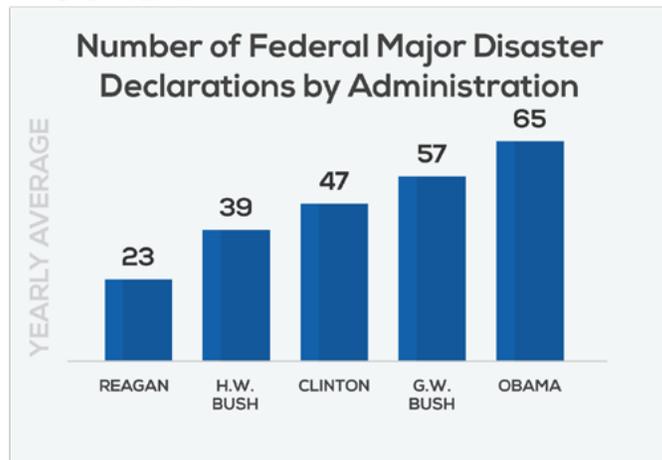
Congressional leaders and policy experts both agree that enhanced pre-disaster mitigation spending would provide lifesaving and cost-saving benefits to the United States. However, despite widespread consensus, research, and real-life evidence to support this approach, the bulk of federal disaster resilience funding continues to be awarded in the aftermath of an event.

The reality of the nation's current disaster policy is this: costs associated with natural disasters in the United States continue to rise, and the federal government is absorbing more and more of the costs as sympathy for victims often creates a political expediency for billions in off-budget, unaccountable federal spending that is allocated for cleanup and recovery. The result is an endless cycle of destruction where cities are rebuilt only to be devastated again by the next big storm. A new approach to federal disaster policy is needed. This report explains why and how more needs to be done in the calm before the storm, and demonstrates how to get more resources targeted to homeowners and building codes. Doing so through a new national disaster policy focused on pre-disaster mitigation not only will benefit homeowners that are of the most immediate concern post-storm; it will also benefit taxpayers.

WHY IS PRE-DISASTER MITIGATION SPENDING NEEDED?

Since 1980, the U.S. has been struck by 178 weather and climate disasters each resulting in damage over a CPI-adjusted total of \$1 billion with the overall costs exceeding \$1 trillion.¹

FIGURE 1



As indicated in *Figure 1*, the number of presidential disaster declarations is on the rise, increasing from a yearly average of 23 under President Reagan to an average of 65 under President Obama.² The 30-year upward trend suggests that the number of declarations will continue to rise in the next administration regardless of party affiliation.

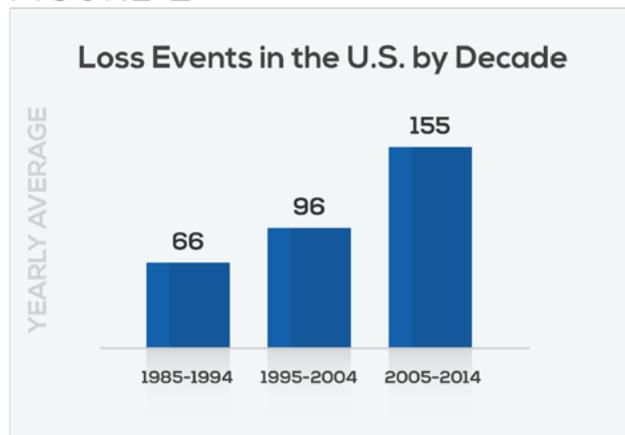
According to several private risk analyses, the rate of occurrence for loss events in the United States is also rapidly rising. *Figure 2* demonstrates the average growth of loss events in the three decades from 1985-2014, indicating an incontrovertible upward trend.

The approximate average number of yearly events eliciting federal major disaster declarations, most of which were categorized as meteorological (i.e., hurricanes and tropical storms), grew from 66 between 1985-1994 to 155 between 2005-2014.³

All else being equal, an increase in both loss events and federal major disaster declarations should result in a spike in both overall and insured losses. A study conducted by Munich Re found this notion to hold true, the results of which can be seen in *Figure 3*.⁴

These statistics captured over the last three decades demonstrate a dramatic increase in average overall and insured losses. Particularly startling is the dramatic spike in losses over the last twenty years, doubling from an average of \$33 billion per year from 1995-2004 to \$65 billion per year from 2005-2014.

FIGURE 2



Increasing Federal Liability for Disaster Recovery

The federal government and insurers have borne the overwhelming majority of these losses, with the federal government taking on an increasingly growing portion of the cost. In 1955, when Hurricane Diane struck the Atlantic coast, the federal government paid for approximately five percent of losses; in 1989, when Hurricane Hugo wreaked havoc on the Southeast, the federal government covered approximately 25 percent; in 2005, when Hurricane Katrina hit the Gulf coast, the federal government took responsibility for approximately 50 percent; and when Hurricane Sandy landed on the Atlantic coast in 2012, the federal government covered approximately 80 percent of total losses.⁵

The Office of Management and Budget reported that the average annual federal funding for disaster relief from 2001-2011 was \$11.5 billion.⁶ In January 2015, former FEMA Director David Paulison testified before the House Transportation and Infrastructure Subcommittee on Economic Development, Public Buildings, and Emergency Management that by 2012, that average had jumped to almost \$13 billion. Paulison went on to state that, since 2011, \$137 billion has been appropriated for disaster relief measures, which equates to **roughly \$400 per household, annually.**

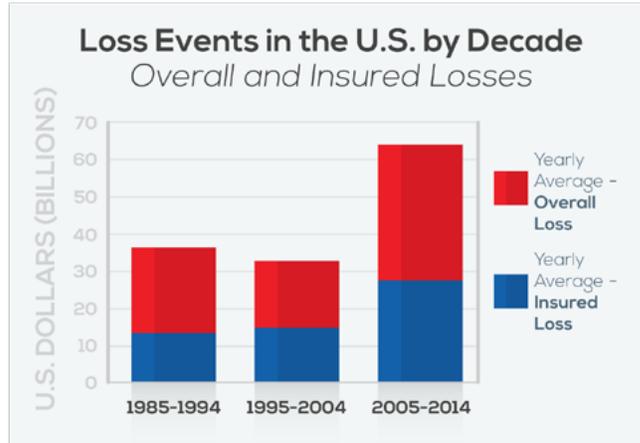
The disasters responsible for the highest level of damage are wind and rain driven events such as hurricanes. Tropical hurricanes affect the Atlantic and Gulf coasts disproportionately, with the largest number of billion dollar disasters occurring in Florida (15 events); North Carolina (14 events); Louisiana (13 events); Mississippi (12 events); Alabama and Virginia (11 events); New York (10 events); New Jersey, Pennsylvania, and Georgia (9 events); and Maryland (8 events) between 1980 and 2014.¹

These statistics are concerning because, according to the Insurance Institute for Business and Home Safety, Gulf and Atlantic coastal counties account for 15 percent of the U.S. population but only 3 percent of our land mass.⁷ Furthermore, according to the North Atlantic Coast Comprehensive Study, which was released by the United States Army Corps of Engineers in January 2015, more than eight million people live in areas at risk of coastal flooding; along the U.S. Atlantic coast alone, almost 60 percent of the land that is within a meter of sea level is planned for further development.⁸

Considering the fact that Atlantic and Gulf coast storms have the potential to inflict damage hundreds of miles inland, the **close to \$10 trillion worth of property that exists along the coast constitutes a tremendous potential liability to the federal government and taxpayers.**⁷

Clearly, the rising trend in federal disaster spending is unsustainable over the long term. Current U.S. disaster policy, with its emphasis on funding post-storm recovery efforts and minimal focus on mitigation, serves only to perpetuate a cycle of destruction. Conversely, shifting the focus to pre-disaster mitigation would provide lifesaving and cost-saving benefits to the United States.

FIGURE 3



HOW WILL PRE-DISASTER MITIGATION CURB THE LOSS OF LIFE AND INFRASTRUCTURE?

With federal hazard mitigation policies in place, we can rebuild our nation to a stronger standard and curb the unsustainable liability to the U.S. government.

Risk = Hazard x Vulnerability x Exposure.⁹

- Hazard: the probability of a given event occurring.
- Vulnerability: measures how well-prepared a place is for a given event, regardless of how likely that event is to occur.
- Exposure: refers to how many people would be affected by a potential disaster.

Hazard mitigation can greatly reduce the 'vulnerability' and 'exposure' variables by making physical changes to the built environment, lowering risk levels, and producing significant long-term savings.

Hazard mitigation encompasses a wide range of projects. Generally speaking, these projects fall into one of three categories: strengthening and protecting critical infrastructure,¹⁰ property acquisition and demolition/relocation in high risk areas, and strengthening the standard to which structures are built.¹¹

Strengthening and Protecting Critical Infrastructure

Critical infrastructure is the backbone of our nation's economy, security, and health. Protecting and strengthening critical infrastructure to withstand the force of a natural disaster by reducing the 'vulnerability' element of the equation can save lives and reduce costs. After a hurricane, the challenge of implementing recovery efforts can be exacerbated for first responders and survivors when the power goes out, the water becomes tainted, or the transportation arteries that our communities utilize are blocked. Mitigation projects included in this category are aimed at reducing the vulnerability of these systems and can prevent disruptions or failures during a disaster.

Example: As a result of Hurricane Sandy, the Sayreville Pumping Station – the largest wastewater pumping station in New Jersey, serving 33 municipalities and 700,000 people – flooded and lost power for 10 days. The federal government responded by investing over \$61.6 million to build a perimeter flood wall around the pumping station, install generators, and relocate critical equipment to more protected areas in an effort to prevent disruptions during future disasters.¹²

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Property Acquisition and Structure Demolition/Relocation in High Risk Areas

Hazard mitigation also involves acquiring and demolishing or relocating properties in high risk areas to reduce the 'exposure' element of the equation,¹¹ which cannot be sufficiently reduced by mitigating the actual structure.

Example: New Jersey is pursuing the acquisition of more than 1,000 flood-prone properties in an effort to move New Jersey residents out of high-risk areas.¹²

Strengthening the Built Environment

Lastly, hazard mitigation deals with projects to strengthen a structure both pre-disaster and post-disaster. This encompasses a wide range of projects aimed at reducing the 'vulnerability' of a structure to potential hazards.

Examples: Structure elevation, mitigation reconstruction, structural retrofitting of existing buildings, non-structural retrofitting of existing buildings, safe room construction, wind retrofit for one and two family residences, infrastructure retrofit, soil stabilization, and post-disaster and pre-disaster building code enforcement are all encompassed within this category.

Multiple studies have demonstrated that strong building codes are the most effective yet often overlooked aspect of the risk reduction equation.

- A 2007 Congressional Budget Office study, commissioned to assess the extent to which pre-disaster spending on mitigation programs resulted in a reduction in expected losses from future disasters in the short-term and in overall federal disaster assistance in the long-term, found that for each \$1 spent on pre-disaster hazard mitigation, future losses were reduced by approximately \$3, concluding that federal investment in pre-disaster mitigation was cost-effective.¹³



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- In the aftermath of Hurricane Katrina, Louisiana State University Hurricane Center estimated that strong building codes could have reduced wind damage by 80 percent, saving \$8 billion. A separate study looked at the impact of building codes during a Category 3 hurricane in Mississippi, and concluded that strong building codes would reduce damage on approximately 40,000 buildings, saving an estimated \$3.1 billion.
- A Multi-hazard Mitigation Council study in 2005 found that for every \$1 dollar invested in disaster mitigation activities such as promoting the adoption of strong building codes, the nation saves approximately \$4 in post-disaster relief costs.⁹

The scientific evidence demonstrating the impact of strong building codes as a disaster mitigation strategy is consistent and conclusive — the enforcement of strong building codes, particularly at the state level, reduces vulnerabilities in the built environment on a macro level and will significantly reduce long-term losses.

Beyond the science, however, is the real-life evidence to support the benefits of stronger building codes.

Insurance Institute for Business & Home Safety (DisasterSafety.org) FORTIFIED Homes



Bolivar Peninsula, Texas, a few days after Hurricane Ike, September 2008

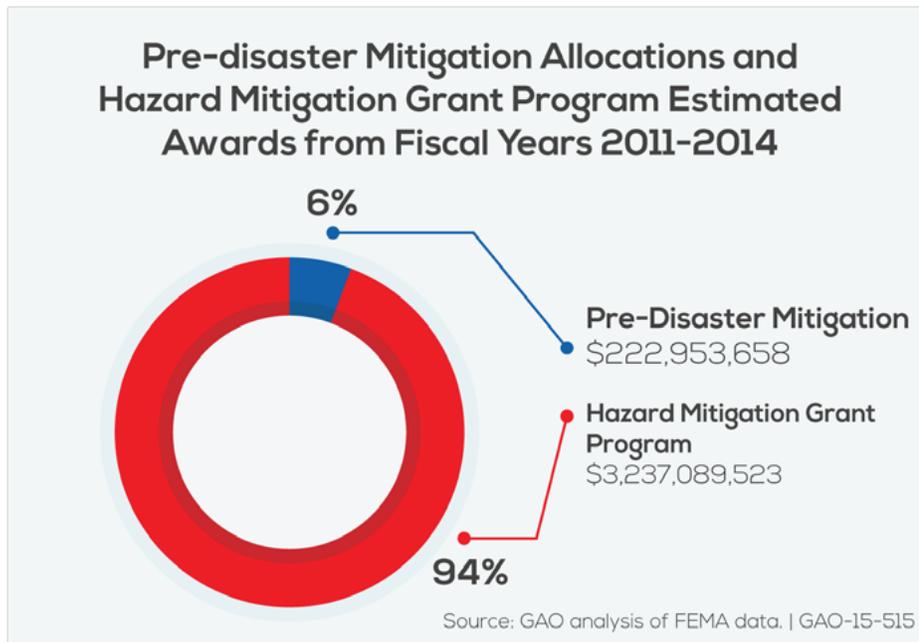
There were 13 homes built to IBHS FORTIFIED standards on the Bolivar Peninsula, just north of Galveston. Three were knocked down by other houses during the hurricane, not by storm surge or high winds. The remaining ten, seen here, were virtually the only homes that survived and were able to be repaired.

CURRENT STATE OF FEDERAL PRE-DISASTER MITIGATION POLICY

The federal government has designated programs in place to fund hazard mitigation initiatives. Except in those cases when supplemental funding is approved following a catastrophic disaster, the primary federal programs that provide funding to states and localities to help enhance their disaster resilience are the Pre-Disaster Mitigation Grant Program (PDM) and the Hazard Mitigation Grant Program (HMGP) — PDM for pre-disaster mitigation and HMGP for post-disaster mitigation.¹² PDM grants are funded annually by congressional appropriations and are limited to a certain number of applications per year. HMGP is awarded post-disaster as a percentage of the total cost of the disaster relief package and is often allocated off-budget through emergency supplemental spending bills.

In the event of a major disaster declaration, such as those following Hurricanes Katrina and Sandy, the federal government also funds post-disaster hazard mitigation through a number of other federal programs as part of an emergency supplemental spending bill. For example, the Disaster Relief Appropriations Act of 2013 appropriated \$50 billion across 19 agencies with funding for more than 60 programs for Hurricane Sandy recovery, some of which provided opportunities to incorporate hazard mitigation and other disaster resilience-building activities into disaster recovery efforts. These programs include the (1) FEMA Hazard Mitigation Grant Program (HMGP), (2) FEMA Public Assistance (PA), (3) HUD Community Development Block Grant-Disaster Recovery (CDBG-DR), (4) the Department of Transportation's Federal Transit Administration (FTA) Emergency Relief Program (ERP), and (5) the U.S. Army Corps of Engineers' Sandy Program.

FIGURE 4



While the federal government maintains an array of programs designed to assist vulnerable populations in the wake of a disaster, the same cannot be said for the period before a disaster strikes. *Figure 4* shows that between fiscal years 2011-2014, the federal government allocated roughly \$222 million for pre-disaster mitigation compared to \$3.2 billion for post-disaster mitigation, a ratio of roughly 1:14.¹²

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The stark contrast between pre-disaster mitigation spending and post-disaster mitigation spending has not gone unnoticed by congressional leaders and policy experts.

In January 2015, the House Transportation and Infrastructure Subcommittee on Economic Development, Public Buildings, and Emergency Management held a hearing on disaster recovery efforts. Among those testifying was former FEMA Director David Paulison, who urged Congress to commission a comprehensive assessment of federal disaster spending, the rising costs of disasters, the cost-effectiveness of disaster assistance, and the best strategies to reduce disaster losses through mitigation programs going forward. Mr. Paulison also called on the panel to explore ways to enhance building resiliency, strengthen building codes and reduce disaster costs, paving the way for the federal government to put in place a comprehensive national disaster mitigation strategy that will minimize losses and maximize federal investment.

Following the testimony of Mr. Paulison, Congressman Lou Barletta [R-PA], Subcommittee Chairman, announced that the Committee would host a series of roundtables in Washington, D.C. and other regions throughout the U.S. to gather information from stakeholders on what should be done to reduce disaster costs and losses. Chairman Barletta also introduced H.R. 1471 — The FEMA Disaster Assistance Reform Act – to authorize a study of trends in the rising costs of disasters in the United States. H.R. 1471 will lead to recommendations on ways to reform the current system to reduce losses and enable cost savings and improved efficiency and effectiveness for FEMA.

The four roundtables held in 2015 included a diverse group of stakeholders comprised of experts from government, academia, and the private sector to discuss disaster spending and hazard mitigation, reaching consensus on five key principles.

Five Key Roundtable Principles:

1. Federal disaster assistance as a percentage of total losses is increasing;
2. The federal government continues to have massive fiscal exposure in high risk areas;
3. The U.S. needs a comprehensive national mitigation investment strategy;
4. The best way to facilitate resilient construction is through strong and enforced building codes and incentives for enacting the codes and
5. Resilient construction saves lives.

Federal disaster assistance as a percentage of total losses is increasing

Throughout the roundtables, participants agreed that the federal cost-share for natural disasters is increasing. At a Washington, D.C. roundtable, Dr. Erwann Michel-Kerjan, Executive Director of the Wharton Risk Management and Decision Processes Center, presented data showing that, in the U.S., the federal cost-share for natural disasters has increased from approximately 6% after Hurricane Diane in 1955 to 77% in 2015, as compared to Europe, where the average share for national governments is between 40-50%.

Table 1: Role of the Federal Government in Paying for Natural Disaster Losses¹⁶

DISASTER	FEDERAL RELIEF AS % OF TOTAL COST
Hurricane Sandy (2012)	> 75% *
Hurricane Ike (2008)	69%
Hurricane Katrina (2005)	50%
Hurricane Hugo (1989)	23%
Hurricane Diane (1955)	6%

The federal government continues to have massive fiscal exposure in high risk areas

Eric Nelson, Vice President of Catastrophe Strategy & Analysis at Travelers Insurance, stated that the U.S. has likely not seen the worst storm yet, providing several examples of hypothetical situations in which a large scale event would inflict catastrophic economic losses in the United States. For example, if a Category 3 Hurricane were to hit New York City, it would inflict approximately \$108 billion in property and casualty losses and between \$216 billion and \$324 billion in total economic losses.

The U.S. needs a comprehensive National Mitigation Investment Strategy

Participants agreed that a National Mitigation Investment Strategy would reduce the current duplication of efforts and maximize the return on investment for mitigation dollars.

The best way to facilitate resilient construction is through strong and enforced building codes and incentives

Availability of a variety of incentives can significantly strengthen the housing stock in America. Tax credits for builders and homeowners, building code enforcement grants to states and localities, and mitigation incentives for states to adopt and enforce strong building codes have all proven to be highly effective.

Resilient construction saves lives

Roundtable participants generally agreed on the need for better building standards to reduce losses over time, noting that FEMA funds are wasted in federal disaster areas because the funds are used to rebuild to the status quo instead of a higher standard. One participant cited the stringent building codes that hardened and elevated housing, helping the Outer Banks of North Carolina to escape relatively unscathed after Hurricane Arthur, a Category 2 hurricane, struck in 2014. Another cited Florida, which after suffering catastrophic losses from Hurricane Andrew in 1992, took steps to implement a strong statewide code and now has one of the best building codes in the country. Ultimately, stronger building codes saves lives and decrease the amount of taxpayer dollars that would otherwise be spent on post-disaster mitigation.

THE LIMITATIONS OF POST-DISASTER SPENDING

Two recent reports, both looking at the inefficiencies associated with the government's response to Hurricane Sandy, offer startling evidence to support the need for a new approach to U.S. federal disaster policy. The first is a July 2015 report by the U.S. Government Accountability Office that details current inefficiencies; the second, a May 2015 report by the Recovery Accountability and Transparency Board, reveals how funding was spent.

THE GOVERNMENT ACCOUNTABILITY OFFICE REPORT¹²

In July 2015, the GAO released a report to Congress titled "Hurricane Sandy: An Investment Strategy Could Help the Federal Government Enhance National Resilience for Future Disasters," which examined how effectively the federal funding appropriated for long-term resiliency projects under the Disaster Relief Appropriations Act of 2013 (Sandy Supplemental) had been utilized.

Through a series of interviews and follow-up surveys with cities and states affected by Hurricane Sandy, the GAO found the emphasis on spending in the post-disaster environment limits states' abilities to engage in risk reducing mitigation activities. Thus, investment in hazard mitigation and other resilience-building activities – which have been proven time and again to reduce loss of life and property by lessening the impact of disasters and expediting the return of normal economic and life activities – is not receiving the consideration or funding needed to reduce the rapidly increasing federal government expenditures on post-disaster recovery.

Although nine of the 16 groups of state officials that the GAO interviewed responded that "disaster resilience and hazard mitigation activities should be integrated into recovery efforts within the first hours and days after a disaster occurs," only three said this happened in the wake of Hurricane Sandy. Additionally, while all of the officials the GAO interviewed stated that "disaster resilience and hazard mitigation activities should be incorporated within the initial hours to initial weeks," five of the groups the GAO interviewed said that it took months to years for this to occur after Hurricane Sandy.

The GAO found that this failure to effectively implement hazard mitigation activities in the post-disaster environment can be attributed to three core issues:

GAO Report – Three Core Issues

1. Prioritization of immediate needs over long-term goals
2. Federal funding fragmentation
3. Insufficient staff resources to coordinate programs

Prioritization of Immediate Needs over Long-Term Goals

The GAO found that officials charged with hazard mitigation were often too occupied with assisting in emergency response (e.g., life-saving activities, restoring power) to focus on future disaster resilience activities. Additionally, officials from 10 of the 13 states and cities surveyed experienced challenges due to the lack of ability of individual businesses or homeowners to take advantage of federal funding. The report

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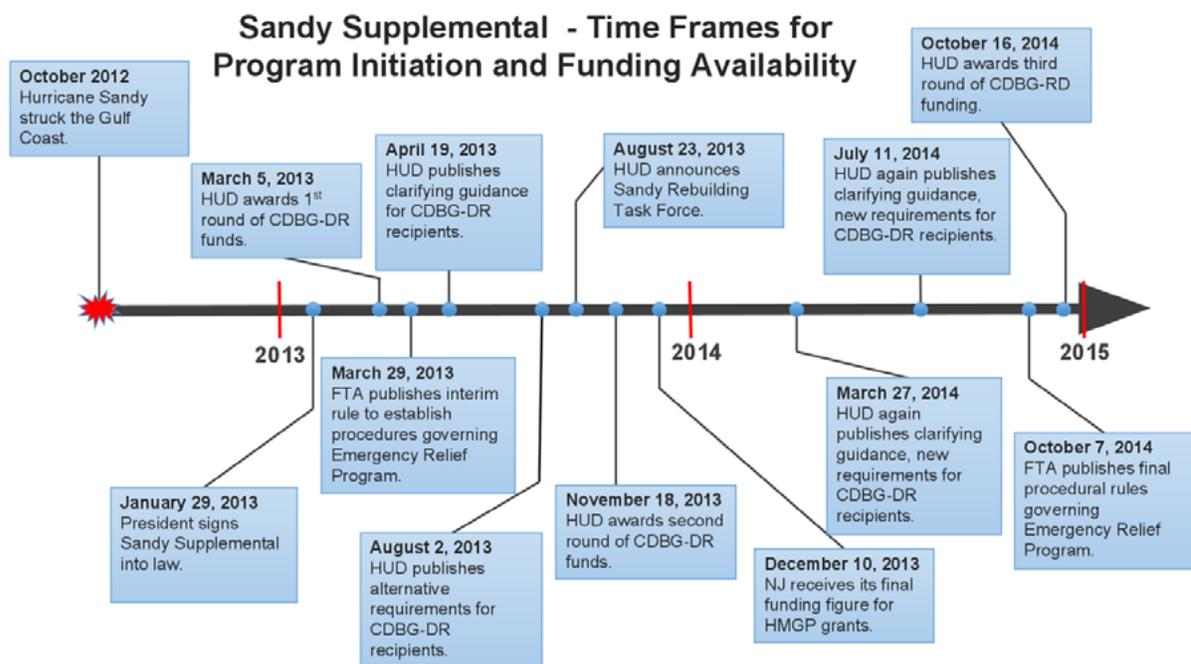
lists reasons ranging from individuals being unable to access the financial resources needed to cover the remaining costs of these projects to being faced with a choice between completing necessary repair work immediately – and reluctantly forgoing hazard mitigation activities – or continuing to incur displacement costs while waiting to receive federal funding to pursue hazard mitigation. The combination of roadblocks both officials and property owners faced prevented even those who were willing to engage in resilience activities from doing so.

Federal Funding Fragmentation

In the wake of Hurricane Sandy, 19 agencies were given funds to implement more than 60 post-disaster recovery programs – some of which included hazard mitigation and other resilience-building activities – via the \$50 billion appropriated by the Sandy Supplemental. This fragmentation creates a barrier for those seeking post-disaster assistance, creating obstructions in the form of varying time frames, program regulations, and application procedures.

Figure 5 illustrates how different programs were initiated at different times, making it difficult for state and local officials to plan to use federal funds in a way that comprehensively addressed overall risk reduction. GAO found that 12 of 13 Sandy-affected states and cities surveyed were unable to maximize their disaster resilience activities due to challenges associated with navigating multiple funding streams and various regulations. Additionally, 11 of the 13 states and cities felt that the timeliness, availability, or usefulness of the federal government’s guidance about what type of federal assistance is available after a disaster – and how it can be used most effectively to pursue disaster resilience – was a challenge that reduced their state’s ability to maximize resilience opportunities.

FIGURE 5: Federal Funding Fragmentation in the Post-Sandy Recovery Efforts¹²



The fragmentation was exacerbated by what the GAO refers to as the lack of a “focal point” within catastrophe-stricken states: an entity that has the time, responsibility, and authority to ensure a uniform approach to increasing disaster resilience. As evidence, GAO notes that state emergency management officials, such as State Hazard Mitigation Officers – who play an important role by coordinating with local communities to enhance disaster resilience – do not always have knowledge of all federal funding streams available for hazard mitigation.

Insufficient Resources

11 of the 13 surveyed states and cities had insufficient informational resources. Officials reported challenges related to the timeliness, availability, or usefulness of the federal government’s guidance about what type of federal assistance is available after a disaster, and how it can be used to most effectively pursue disaster resilience. State officials cited problems such as key stakeholders being underrepresented in FEMA discussions and available guidance being incomplete, overwhelming, contradictory, or generally unclear.

Beyond informational insufficiencies, the regions hit by Hurricane Sandy were also provided with post-disaster funding that was often inadequate for addressing larger critical infrastructure needs, forcing states and localities to focus more of their attention on smaller projects that were not effective at reducing their most critical risk areas. Furthermore, funds were often distributed thinly throughout multiple communities in a way that did not effectively improve the overall risk profile of the state.

Shifting the Focus to Pre-Disaster Mitigation

Congressional leaders, policy experts and the GAO all agree that enhanced pre-disaster mitigation spending would provide lifesaving and cost saving benefits to the United States.

The effects of the three core issues surrounding post-disaster resilience activities addressed above are problematic when considering that the bulk of federal disaster resilience funding is awarded after a disaster has already struck. Overall, the GAO Report demonstrates that the emphasis on spending in the post-disaster environment limits states’ abilities to plan and prioritize for future risk reduction. More should be done in the calm before the storm and more resources should be targeted to homeowners and building codes; it is the displaced homeowners that are of the most immediate concern post-storm.

State and local recovery officials emphasized that a more effective approach to disaster resilience would be to plan and implement hazard mitigation before a disaster occurs. This was reiterated by the finding that 12 of the 13 states surveyed reported that the emphasis of federal resources on the post-disaster environment challenged their ability to maximize federal disaster resilience investments.

Based on the limitations of post-disaster spending and the proven benefits of pre-disaster hazard mitigation investment, we must shift away from the current federal disaster spending model and towards a system that emphasizes proactive pre-disaster resilience activities.

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RECOVERY ACCOUNTABILITY AND TRANSPARENCY BOARD FINAL REPORT TO CONGRESS¹⁷

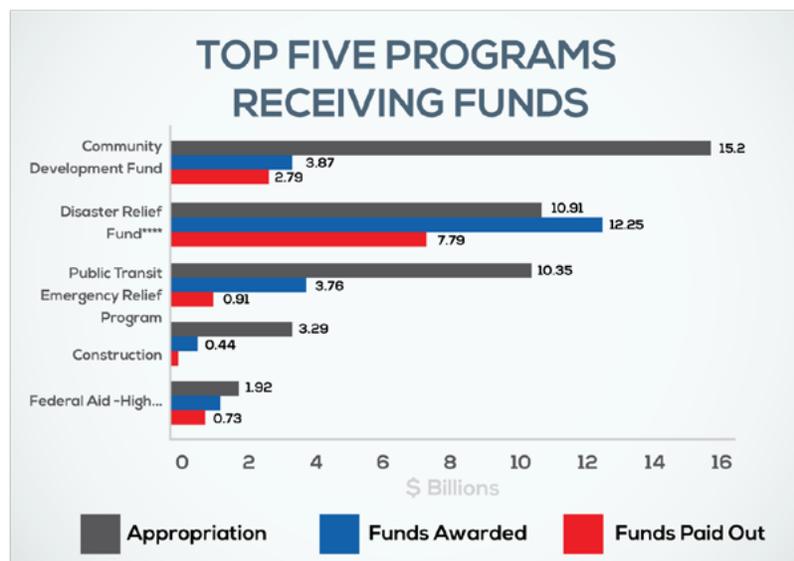
While the GAO Report focused on the effectiveness of these funds towards improving long-term resilience, the Recovery Accountability and Transparency Board was authorized by Congress to “develop and use information technology resources and oversight mechanisms to detect and remediate waste, fraud, and abuse” in the awarding and spending of the funds as a part of the Sandy Supplemental. Since the Sandy Supplemental became public law in January of 2013, the RATB has issued six quarterly reports to Congress with the Board’s findings.

In its final report to Congress, the RATB found \$26 billion of the \$47.9 billion in funding appropriated by the Sandy Supplemental had been awarded as of March 21, 2015, with a total of \$15 billion of those funds having been paid out.



As shown in *Figure 6*, the Housing and Urban Development’s Community Development Fund and Department of Transportation’s Public Transit Emergency Relief Program hold the overwhelming majority of unspent funding from the Sandy Supplemental. Of the \$15.2 billion designated to the Community Development Fund, only \$2.79 billion has been paid out. The Public Transit Emergency Relief Program holds the second largest reserve of unspent funds, with only \$0.91 billion of \$10.35 billion having been paid out. In fact, of the \$36.99 billion in non-FEMA funding designated to government programs in the Sandy Supplemental, only \$6.93 billion has been paid out.

FIGURE 6: Top Five Programs Receiving Funds¹⁷



OIG Hurricane Sandy Supplemental Key Findings

Since January 2013 the office of Inspector General has opened 225 investigations and initiated 72 audits across various agencies. From those investigations, the various OIGs identified \$226.9 million in questioned costs and recommended \$76.7 million be reprogrammed for better use of funds. Of the \$76.7 million recommended for better use of funds, \$53.2 million was recommended from HUD CDF. Specific findings from OIG audits of DOT and HUD are outlined below.

DOT Public Transit Emergency Relief Program

The Sandy Supplemental designated more than \$10 billion to fund FTA's new Public Transportation Emergency Relief Program. In December 2013, DOT OIG reported that FTA had yet to complete all Hurricane Sandy risk assessments and oversight guidance for its emergency relief program. DOT OIG has initiated an audit to determine whether FTA provides effective oversight of grantees' contracting practices using Hurricane Sandy funds.

HUD Community Development Fund

Inefficiencies were found in the use of disaster funds by cities large and small. The Department of Housing and Urban Development OIG completed an audit of the New York City Office of Management and Budget's administration of the Community Development Block Grant Disaster Recovery Assistance (CDBG-DR) funds awarded to the city as a result of damages caused by Hurricane Sandy, and found that funds designated for the city went to a subrecipient without adequate objectives or monitoring for its use. As a result, city officials could not assure HUD that the CDBG-DR funds were disbursed for eligible, reasonable, and necessary program expenses in compliance with HUD rules and regulations. Further, the remaining allocation of \$40 million would be considered funds put to their intended use only if city officials establish adequate monitoring controls.

A similar review of Minot, North Dakota's CDBG-DR program determined that the city did not fully comply with federal and local procurement requirements. The audit determined that this was because the city lacked detailed operational procedures and checklists for implementing applicable procurement regulations. As a result, HUD was not assured that the city received the best value and greatest overall benefit for more than \$11.6 million in various CDBG-DR procurement contracts, amendments, and change orders.

NATIONAL MITIGATION INVESTMENT STRATEGY

Research and studies have consistently demonstrated the best return on investment can be achieved when the federal government invests in pre-disaster hazard mitigation activities. Despite this, recent reports by the U.S. Government Accounting Office and the Recovery Accountability and Transparency Board have shown that the federal government continues to invest the majority of its disaster appropriations on cost-inefficient, post-disaster mitigation activities that do not reduce the overall risk profile of the nation.

To break the cycle of destruction and recovery that currently exists, the U.S. must begin to shift from ineffective, reactive post-disaster spending to a proactive system that focuses on protecting the nation from the rising occurrence of major disasters.

This report recommends that Congress implement a cohesive National Mitigation Investment Strategy to achieve that goal. This new approach would increase the budget for FEMA's Pre-Disaster Mitigation Grant Program and create a new Building Code Enforcement Pilot program. The investment strategy also calls for the adoption of three legislative initiatives designed to incentivize mitigation on a broad scale at the state, local, and individual level in a comprehensive and efficient manner.

A National Mitigation Investment Strategy will also authorize a deeper assessment of disaster spending across all federal programs and provide recommendations on additional reforms that will further guide sound public policy on federal mitigation spending going forward.

Not only will the implementation of a National Mitigation Investment Strategy benefit the U.S. in the long-term, but the federal government can fund it without additional cost to taxpayers. Experts agree that every dollar in prevention saves \$3 to \$4 for the taxpayer, meaning a \$1 billion dollar investment over 5 years could save \$3-4 billion in the aftermath of the next disaster.

The analysis offered in this BuildStrong Coalition report supports the recommendation that the federal government invest \$1.265 billion of the \$30 billion worth of unspent non-FEMA funding from the Hurricane Sandy Supplemental Disaster Relief Appropriations Act of 2013 to protect our nation's vulnerable communities by implementing hazard mitigation efforts.

By implementing the recommendations outlined in this report, the U.S. government can save lives and federal dollars by being prepared when the next big disaster strikes.

END THE CYCLE OF DESTRUCTION:

THE U.S. SHOULD INVEST MORE BEFORE DISASTERS THROUGH A NATIONAL MITIGATION STRATEGY

A Comprehensive Approach to Federal Disaster Investment

The specific elements of the proposed National Mitigation Investment Strategy include:

- The Safe Building Code Incentive Act
- The FEMA Disaster Assistance Reform and Reauthorization Act
- FEMA PDM Budget Increase
- The Disaster Savings and Resilient Construction Act
- New FEMA PDM 5-Year Pilot Building Code Grant Program

As outlined below, each legislative initiative is designed to address one or more of the deficiencies of the current system.

Problem #1	State-level interest in disaster mitigation is not being fostered by the federal government.
Recommendations:	Provide states and localities federal grants under FEMA PDM to enforce qualified building codes. Provide a new financial incentive for states to adopt and enforce model statewide building codes.
Legislative Solution:	H.R. 1748 - The Safe Building Code Incentive Act

H.R. 1748 — The Safe Building Code Incentive Act — would give a powerful incentive to states to adopt and enforce stronger statewide building codes. If enacted into law, states that adopt and enforce nationally recognized model building codes for residential and commercial structures would qualify for an additional four percent of funding available for Hazard Mitigation Grant Program (HMGP) grants.

Following a disaster declaration, FEMA and other federal programs provide funding for post-disaster mitigation activities. However, as the GAO has reported, there are systemic failures to capitalize on these grants in a post-disaster environment due to insufficient resources to complete grant applications and the prioritization of immediate needs over long-term goals after a disaster. There are even some reports of FEMA mitigation officers discouraging homeowner investment in mitigation following a disaster due to the additional time it would add to the rebuilding process. As a result, homeowners often forego hazard mitigation and rebuild to the minimum accepted standard dictated by the local building codes.

However, in large portions of the U.S., local building standards are outdated and often without the critical safety components present in model codes. Conversely, when a disaster declaration occurs in a state that enforces a model statewide building code, every home is rebuilt to a model standard regardless of whether

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the homeowner capitalizes on post-disaster hazard mitigation grant opportunities. The net result is a much larger reduction in the overall risk portfolio of the state.

Problem #2	Multiple federal agencies are responsible for managing a fragmented federal effort to enhance the nation's disaster resilience.
Recommendation:	Pass legislation to authorize a comprehensive study of disaster spending and losses.
Legislative Solution:	H.R. 1471 - The FEMA Disaster Assistance Reform and Reauthorization Act

The FEMA Disaster Assistance Reform Act of 2015 is a key part of the national mitigation investment strategy, as it authorizes a much needed assessment of historical trends in U.S. disaster losses and costs, and will provide recommendations on ways to further reduce losses. The GAO report affirms that the precedent established by congressional use of unplanned, reactive post-catastrophe appropriations fails to incentivize state and local investment in pre-disaster risk reduction. Many of the federal programs tasked with implementing mitigation in the wake of major disasters were never designed to handle such non-federal initiatives or work together with states or municipalities in a cohesive fashion. As a result, the federal government no longer has a true grasp on the size, scale, or number of programs that oversee mitigation initiatives.

It has been over 20 years since a comprehensive assessment of federal disaster spending was last undertaken. Given the impact of Hurricanes Katrina and Sandy on federal disaster spending, the current system is drastically different today than it was 20 years ago. The FEMA Disaster Assistance Reform and Reauthorization Act will study costs and losses from natural disasters; identify what disaster assistance is available from all federal sources (including descriptions of programs, eligibility and authorities), where assistance has been used geographically, how quickly the funds are used, and how that assistance is coordinated among the various agencies and departments; and provide recommendations on ways to improve the effectiveness and efficiency of the delivery of such assistance. Furthermore, the study will provide recommendations on the fundamental principles that should drive national disaster assistance decision making, including the appropriate roles for each level of government, the private sector, and individuals.

Problem #3	Between fiscal years 2011-2014, the federal government allocated roughly \$222 million for pre-disaster mitigation compared to \$3.2 billion for post-disaster mitigation, a ratio of roughly 1:14. ¹²
Recommendation:	Correct the funding imbalance by increasing FEMA's Pre-Disaster Mitigation Grant Program budget.

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Legislative Solution:

FEMA PDM Budget Increase of \$500 million from FY 2016 to FY 2020.

The advantages of pre-disaster mitigation are well documented throughout this report. Based on current funding levels for federal pre-disaster mitigation programs, it is clear that Congress must reexamine the balance between pre-and post-disaster spending. Our proposal is to increase FEMA's PDM budget by \$100 million per year from fiscal years 2016 to 2020 to help correct this significant imbalance. This will allow states that have not been impacted by a major disaster to still apply for mitigation grants. It will also reduce the incentive for states to wait until after a disaster occurs to implement mitigation. Applying our proposed funding changes to PDM from fiscal years 2011–2014 would have reduced the ratio of PDM to HMGP spending from 1:14 to 1:4, creating a much needed and more well-balanced approach.

Problem #4

Builders and homeowners often choose not to pursue opportunities to integrate hazard mitigation into the rebuilding process after a natural disaster due to the highly fragmented grant system, uncertain timing of the grant approval process, and exhaustive application requirements.

Recommendation:

Pass legislation to establish a permanent tax credit to owners and/or contractors who use resilient construction techniques when building and renovating homes and commercial structures in federally declared disaster areas.

Legislative Solution:

H.R. 3397 - Disaster Savings and Resilient Construction Act

The goal of hazard mitigation is not to reduce the probability of a given event occurring, which is largely impossible, but rather to reduce the vulnerability and exposure by making physical changes to the built environment. While studies have shown that pre-disaster mitigation is preferable to post-disaster mitigation, there will always be some level of destruction from natural disasters. During situations in which pre-disaster mitigation was not present or was insufficient to prevent damage to a structure, post-disaster hazard mitigation should be integrated into the recovery process immediately following a disaster.

The Disaster Savings and Resilient Construction Act would establish a clear and permanent tax credit for owners and/or contractors who use resilient construction techniques when building and renovating homes and commercial structures in federally declared disaster areas. While the Safe Building Code Incentive Act would give a powerful incentive to states to adopt and enforce the statewide building codes that serve as minimum life-safety standards, this legislation goes a step further in incentivizing the use of IBHS FORTIFIED building measures, which provide even stronger safety standards.

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Problem #5	Not enough resources are being focused on pre-disaster mitigation, particularly as it relates to residential building codes.
Recommendation:	Create a program to operate inside the existing FEMA PDM program to provide qualified states and localities with the opportunity to apply for budget grants to defray the enactment and enforcement cost for qualified building codes.
Legislative Solution:	New FEMA PDM 5-Year Pilot Building Code Grant Program

In many instances, states have the political will to enact a strong building code but lack the budget resources to pay for a quality inspection regime. A new FEMA PDM 5-year pilot building code grant program would address this issue.

The pilot program would establish \$500 million in grants to facilitate the establishment and enforcement of qualified building codes for states and localities. A qualified building code is consistent with one of the last three editions of the model building code developed by the International Code Council known as the International Residential Code. Eligible projects would include training and licensing of building officials, enforcement costs to state and local governments, and other projects designed to promote the establishment and enforcement of building codes.

Path Forward

The current system invests far too heavily in post-disaster mitigation while spending very little on pre-disaster mitigation. The Safe Building Code Incentive Act, the Disaster Savings and Resilient Construction Act, the FEMA Disaster Assistance and Reauthorization Act, the new FEMA PDM budget increase, and the new building code enforcement pilot program address the major flaws in the federal disaster spending system by providing the framework for a National Mitigation Investment Strategy. For this reason, the BuildStrong Coalition recommends that the federal government reprogram a small portion of the unspent money at HUD and DOT from the Hurricane Sandy Supplemental to pay for the costs associated with these bills.

CONCLUSION

Given the findings of the GAO report on the benefits of pre-disaster hazard mitigation contrasted with the shortcomings of post-disaster hazard mitigation and the misuse of funding identified in the RATB report, it is our recommendation that the federal government rescind and repurpose \$1.265 billion of unspent funding at HUD CDF from the Sandy Supplemental to pay for a National Mitigation Investment Strategy that will produce broad-scale risk reduction throughout the U.S. The table below outlines the estimated investment costs of each component of the strategy to how the \$1.265 billion will be allocated.

INVESTMENT PIECE:	DESCRIPTION:	ESTIMATED 5-YEAR COST:
Safe Building Code Incentive Act	Provides an incentive for states to adopt and enforce strong statewide building codes.	\$255 million
Disaster Savings and Resilient Construction Act	Provides a tax credit to owners and/or contractors who build using resilient construction techniques	\$10 million
FEMA Pilot Building Code Grant Program	Pilot program to provide qualified states and localities with the opportunity to apply for grants to defray the enforcement costs of qualified building codes	\$500 million
FEMA PDM Enhancement	Corrects the funding imbalance between pre-disaster mitigation and post-disaster spending by increasing FEMA's Pre-Disaster Mitigation Grant Program budget by \$100 million per year from FY 2016 to FY 2020	\$500 million

TOTAL 5-YEAR COST ESTIMATE = \$1,265,000,000

There is a lack of focus on residential mitigation in all Sandy non-FEMA mitigation programs. A portion of this \$1.265 billion must be focused on homeowners and not just applied to public work projects and infrastructure. By implementing the National Mitigation Investment Strategy, the nation can save lives and federal dollars by being prepared when the next big disaster strikes.

ADDITIONAL RECOMMENDATION

The tenets of our National Mitigation Investment Strategy are exclusively focused on pre-disaster mitigation for new construction. However, we are living in an already-built environment and the often inadequate construction practices of the past have been incorporated into millions of homes throughout the country. These homes are at high risk for catastrophic losses in the event of a disaster, especially those located in flood zones along the coast or on active fault lines. There are solutions to strengthen these homes by retrofitting the existing structure to mitigate future damage. The Disaster Savings Account Act as described in the table below is an example of a legislative proposal that could begin to address this problem. We recognize that retrofitting is a significant area of need and must ultimately be part of any effective long-term solution to the rising costs of disasters. However, we feel it is important to focus on optimizing existing pre-disaster mitigation programs before pivoting to the existing housing stock in the U.S.

Problem	A precedent of reactive, post-catastrophe appropriations established by the federal government fails to incentivize local and individual investment in pre-disaster risk reduction.
Recommendation:	Pass legislation to establish a new tax-preferred savings account for the purpose of fortifying a residence property (e.g. house, condo, apartment) in preparation for an impending natural disaster.
Legislative Solution:	H.R. 2230 - The Disaster Savings Accounts Act

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ABOUT THE BUILDSTRONG COALITION

BuildStrong is a coalition of national business and consumer organizations, companies, and emergency management officials dedicated to promoting stronger building codes. We are focused on creating dialogue – between Members of Congress and the firefighting, emergency management, and insurance communities – based on the science and research behind safe building codes. The BuildStrong Coalition urges enactment of a National Mitigation Investment Strategy in order to protect property and ultimately save lives from the devastation of natural disasters.



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