



MITIGATION: A PUBLIC POLICY PRIMER ON DISASTER SAFETY

The Institute for Business & Home Safety (IBHS) is a not-for-profit, applied research and communications organization whose mission is to reduce property losses caused by a variety of risks, including fire, high winds, earthquakes, hail, ice and snow, terrorism and lack of proper maintenance. Both enactment and proper enforcement of appropriate laws and regulations greatly influence the effectiveness of property loss mitigation efforts. In addition, a variety of private and public sector incentives can, and do, motivate individuals, businesses and communities to actively embrace meaningful mitigation techniques.

IBHS studies and educational materials are regularly referenced in public policy debates around the country. To further an understanding of the concepts at the heart of IBHS' work, IBHS has prepared this primer, which defines basic concepts and explains how federal, state and local governmental policies can enhance loss reduction efforts.

What is mitigation? And other frequently asked questions.

WHAT IS MITIGATION?

"Mitigation" encompasses a wide range of activities that should be undertaken to increase the likelihood that homes, workplaces and essential public buildings can survive a natural or human-induced catastrophe. These include:

- strengthening new construction through regionally appropriate building codes
- and utilizing "code-plus" construction techniques;
- properly retrofitting existing homes and commercial structures to improve resiliency;
- disaster readiness and post-event operational continuity planning; and,
- general and specific land use planning that considers natural and man-made hazards.

The term "mitigation" comes from Latin roots and dates back to the Middle Ages. It is not a word used in everyday conversation, and sometimes is confused with, or erroneously related to, a sound-alike, unrelated word: litigation. Other, more commonly used terms that can be substituted for mitigation include loss prevention, loss reduction, loss control, disaster safety and structural adaptation. Regardless of the specific term used, the goal

is always the same: to reduce human and economic losses due to natural disasters, seasonal weather and human activity (accidental or intentional).

WHY IS MITIGATION IMPORTANT?

Saving lives, protecting homes and preserving communities is a public health objective, economic imperative and humanitarian obligation. Through mitigation, homes and businesses can be better protected from a wide variety of dangers, including electrical, plumbing or mechanical building system failure, along with earthquakes, freezing weather, floods, hail, lightning, wildfire and windstorms.

Virtually every American lives in an area that faces one or more natural disaster risks; for this reason, emphasizing disaster preparedness and response must be a national priority.

- Data from the U.S. Census Bureau recently published in USA Today indicate that, in 2006, 34.9 million people were seriously threatened by Atlantic hurricanes, compared with 10.2 million people in 1950.
- Approximately 40 percent of the U.S. population resides in counties that face medium to high seismic risk.
- One-quarter of U.S. residents live in a county that has been ravaged by wildfire during the last 25 years.
- In 2008 alone, there were 16 named tropical storms (eight of which were hurricanes), 1,700 tornadoes,

widespread flooding due to winter storms, spring melts, tropical storms and other severe weather events.

According to a study conducted by the Multi-hazard Mitigation Council (MMC) for the Federal Emergency Management Agency (FEMA), on average, every dollar spent on loss prevention saves society (individuals, states and communities) an average of \$4 in future reduced losses. This does not include impossible to quantify losses, such as disruptions to lifestyle, family keepsakes, neighborhood character and community spirit.

WHO BENEFITS FROM MITIGATION?

All Americans benefit from disaster loss reduction. Those who live in harm's way are the most immediate beneficiaries in terms of life safety, financial stability, and peace of mind. However, direct and indirect benefits of effective mitigation extend more broadly throughout society. The MMC study indicates that every dollar spent by FEMA on hazard mitigation grants reduced post-disaster relief costs by \$3.65 – a savings for all taxpayers, regardless of where they live.

HOW MUCH DOES EFFECTIVE MITIGATION COST?

In today's economy, homeowners and business owners, including builders, are watching every dollar. That is why it is important to understand that mitigation is a very sound investment, almost always resulting in significant long-term savings in the event of a loss. For example, studies that examined costs and benefits of adopting modern building codes in California and Texas found that every \$1 increase in residential construction costs related to incorporating modern building code provisions focused on seismic and wind mitigation (rather than using older building codes) resulted in a \$6 savings over the life of the structure; i.e., a \$1,000 increase in modern code-related costs would save \$6,000 over the life of the house.

Specific cost increases to bring structures up to the standards of an effective building code may depend on factors such as the particular level of construction quality for that structure and regional building code requirements. It is also possible to make modestly priced homes safer and stronger. For example, 15 Habitat for Humanity houses have been built to IBHS' code-plus Fortified...for safer living® standard through partnerships involving IBHS member insurance companies. In some areas, local, state or federal grants may be available to offset certain construction costs or assist in retrofitting existing moderately priced homes.

Mitigation and Public Policy

A well-designed mitigation strategy is comprehensive and synergistic, encompassing building locations, construction methods and materials, maintenance and disaster preparation and response. Many mitigation "best practices" have been identified through engineering, environmental, and economic research – but they rely on public awareness

and/or public policy application to be widely accepted and utilized. IBHS' public policy agenda unites all elements of mitigation science to promote a more damage-resistant society:

BUILDING CODES

- Building codes are the minimum acceptable standards used to regulate the design, construction and maintenance of buildings. They are based on established scientific and engineering principles, drafted through input from leading technical experts, construction professionals and enforcement personnel, and products industries. IBHS is committed to strong and uniform building codes and provides assistance to states in developing codes and implementing regulatory processes.
- Legislative approval is required for a state to adopt, update and enforce a building code. These codes should be universally applied and not allow for local "opt outs," especially in high-risk areas.
- Federal laws have provided – and can do more to provide – financial incentives to states to improve and enforce modern building codes. One very positive bill that has been introduced in Congress would amend the Stafford Act (legislation that authorizes the President to issue disaster declarations and provide aid to devastated states) to increase funding to states that have strong building codes which are likely to reduce future damages.
- Federal and state funds also have been used to train local building inspectors following enactment of a statewide building code in a high-risk zone.

FORTIFIED...FOR SAFER LIVING®

- IBHS' Fortified...for safer living® construction program offers a package of "code-plus" upgrades designed to greatly increase a new home's resistance to natural perils by strengthening a home's outer envelope; i.e., roof and wall systems, doors, glazed openings and foundation. IBHS also is in the process of developing specific standards for new light commercial construction, as well as options for retrofitting homes to Fortified standards.
- A number of states have created "wind pools" to cover wind damage from hurricanes or other coastal storms. In recognition of the tangible value of effective mitigation, the Alabama, Mississippi and South Carolina wind pools provide substantial policyholder premium credits for homes built to Fortified...for safer living® standards.
- Retrofitting existing buildings can greatly improve resiliency against natural and man-made risks. Building codes generally apply only to new construction or to extensive remodeling when a building permit is required. Many existing homes can be hardened against high winds, hurricanes, water penetration, wildfire and other perils using recognized best practices that strengthen structural elements such as roofs, soffits, gable ends, load paths, and windows and doors. It is important to note that even the strongest home or business will not remain that way without proper maintenance.
- Several states have enacted tax credit or grant programs to help low- and moderate-income homeowners retrofit

their homes. For example, My Safe Florida Home Program, REBUILD Northwest Florida and the South Carolina Safe Home program. Replication of such models is under active discussion in other coastal states, and could be tailored to focus on earthquake, wildfire, winter storms and other perils.

- Various federal proposals would amend the Stafford Act to increase mitigation grant funding, both immediately following disasters and on a proactive basis.
- Disaster-resistant retrofitting also may be possible in conjunction with “weatherization” funding grants provided under the 2009 federal economic stimulus package to improve energy efficiency. Interestingly, there is a definite and beneficial synergy between “green” building and disaster-resistant construction. For example, dual-pane, tempered glass windows make homes much more energy efficient and provide more resistance to water, wildfire and wind.
- IBHS is in the process of finalizing tiered sets of effective retrofit guidelines for homeowners interested in prioritizing expenditures to harden existing homes against earthquake, fire, water, wind and other risks. This program is known as Fortified...for existing homes. Because of tremendous interest in hardening existing homes, draft Fortified...for existing homes retrofit criteria describing “good,” “better,” and “best” structural performance has been picked up by state legislators working on bills to improving the housing stock in their areas.

LAND USE PLANNING

- Land use planning is the process communities use to identify appropriate and compatible uses for land within their jurisdictions. One important aspect is to consider natural hazards and site conditions, as well as real risks/costs associated with development and redevelopment. Although this is not yet the case, all cities, towns, counties and districts should consider the effects of fire, floodwaters, ground shaking, wind and other hazards when administering development regulations.
- Studies show that, in places where state-level support for planning is strong, communities tend to do better at considering natural hazards in local plans. A number of states have passed laws to specifically direct such planning to occur at the local level.
- Coastal wetlands provide a natural buffer zone and help protect coastal homes from storm damage. Federal authorities should study the most efficient and effective ways of utilizing wetlands as natural storm mitigation tools and make recommendations for implementation.

- Similarly, federal studies could help optimize land use planning as it relates to the Wildland Urban Interface (wildfire risk exists in 38 states). The results of such study should be translated into effective land use planning, particularly in localities that are not as developed as our nation’s coastlines.
- While focusing on today’s risks, land use plans also should take the potential effects of climate change into account, so that homes and businesses are not at risk of sea level rise or other weather-related problems.

DISASTER PREPARATION, RESPONSE, AND RECOVERY PROGRAMS

- Finally, every community must play a role in mitigation through disaster preparation, response, and recovery programs that are available and accessible to all citizens, including elderly and disabled individuals, low-income residents, non-English speakers, and other vulnerable populations.
- The National Flood Insurance Program’s (NFIP) Community Rating System is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Under the program, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions that enhance mitigation.
- Community outreach must take place on a consistent regular basis, not just when disaster is imminent. For example, when disaster strikes, standard emergency management practice calls upon localities to take responsibility, at least initially, to evacuate residents. Evacuation plans must include effective means of moving and sheltering people without cars, those with physical limitations or medical needs, large families and pets. Such a complex undertaking requires significant advance planning, ready resources and well-thought out contingencies.
- Consistent with community resilience, local businesses should have business continuity plans in place so that they can continue to operate in the event of natural disaster or other loss. IBHS’ Open for Business® is an example of a business continuity tool kit that should be part of broader community planning efforts.
- To learn more about the risks in your community, steps you can take to reduce loss, and how others have done it” visit www.disastersafety.org.

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