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### **TESTIMONY**

## **A Review of Building Codes and Mitigation Efforts to Help Minimize the Costs Associated with Natural Disasters**

before the

House Transportation and Infrastructure Committee  
Subcommittee on Economic Development, Public Buildings and Emergency  
Management

by

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## **Introduction**

The Association of State Floodplain Managers (ASFPM) is very pleased to offer our thoughts related to the value of hazard mitigation to the nation as it relates to reducing natural disaster costs and specifically offer our recommendations as they relate to building codes. We thank Chairman Denham and Ranking Member Norton for your attention to the importance of hazard mitigation and specifically how building codes factor into the mix of mitigation tools that can be used. ASFPM's members are the country's practitioners who work with flood hazard mitigation programs, land use, and building codes on a daily basis. Given that flooding is the nation's primary natural hazard and that ASFPM's mission is to reduce flood losses in the nation, we commend the committee on its leadership in examining this important issue.

Our testimony will discuss the following key issues:

- The rise of disaster losses in the nation
- The nation's need for a coherent, robust and multi-faceted mitigation effort to reduce disaster costs
- Mitigation as an investment of taxpayer funds to save taxpayer funds
- The effectiveness non-structural mitigation tools including building codes

## **About ASFPM**

ASFPM and its 33 Chapters represent over 14,000 state and local officials and other professionals who are engaged in all aspects of floodplain management and hazard mitigation, including management, mapping, engineering, planning, community development, hydrology, forecasting, emergency response, water resources, and insurance for flood risk. All ASFPM members are concerned with working to reduce our Nation's flood-related losses. For more information on the Association, our website is: <http://www.floods.org>.

## **Disaster Losses in the Nation Continue to Rise**

2011 was record-setting year in the United States. Data indicates that 2011 resulted in at least \$10 billion in flood damages. This is consistent with more recent trends showing an increase in annual flood damages in the previous few decades. In the 1990's damages averaged \$5.6 billion per year while in the 2000's this figure jumped to \$10 billion per year. In 2011, the nation experienced 14 disasters from natural hazards (floods, earthquakes, hurricanes, wind and wildfire) in which costs each exceeded \$1 billion, and President Obama issued a record 99 major disaster declarations. According to data from global insurer Swiss Re, global disaster losses in 2011 were a record \$350 billion and six disasters events in the US were among the top ten costliest worldwide for insurers.

However, this is neither unanticipated nor is it as bad as it could get. While the hurricane seasons of 2004 – 2005, including Katrina resulted in unprecedented losses and strains on our programs to facilitate disaster recovery, including the nation’s first \$100 billion natural disaster, larger events can and will occur. Consider:

- Modeling shows that a category 3 hurricane hitting the New York City area could produce a storm surge of over 20 feet in some areas, flood local airports and lower Manhattan, and result in severe economic disruption.
- Experts have estimated that an earthquake in San Francisco of the same magnitude as the 1906 earthquake could cause as many as 3,400 deaths, displace up to 250,000 households, and cause as much as \$120 billion in property damage.
- The ARkStorm scenario modeling for the Sacramento area based on a scientifically realistic flood event, similar to that which occurred in California in 1861 and 1862, indicates that three quarters of a trillion dollars in damage (business interruption costs of \$325 billion in addition to the \$400 billion in direct property loss) would occur if that event happened today.

Additionally, population trends and climate change are increasing the nation’s vulnerability. As the costs of disasters continue to rise, governments and citizens must find ways to reduce risks from all hazards, but especially natural hazards.

### **What are the Costs to the Taxpayer?**

The US Government is generous when it comes to disaster assistance following losses due to natural hazards. However, to get the total federal costs is rather difficult to calculate because of the large number of Federal agencies involved. One of the underlying philosophies of emergency management in the United States is while an agency like FEMA serves as a lead coordinator, each agency is expected to address disaster response and recovery aspects of their programs. So, many programs throughout the Federal government have this function.

- **Disaster costs in the nation continue to increase. Many factors contribute to this but a key strategy to reduce losses is to invest in hazard mitigation. ASFPM respectfully suggests that this Committee request a compilation of data from other federal agencies and programs.**

# The Nation Needs a Coherent, Robust and Multi-Faceted Mitigation Effort to Reduce Disaster Costs

Hazard mitigation means taking a sustainable action to reduce or eliminate long-term risk from hazards and their effects. A variety of mitigation tools exist that can reduce the risk of losses from natural hazards. Typically, these activities (tools) are arranged in five different categories:

1. Prevention: These activities are intended to keep hazard risk problems from getting worse, and to ensure that future actions do not increase hazard losses. Examples include planning, zoning, and building codes.
2. Property protection: These activities are intended to modify existing development subject to hazard risk. Examples include acquisition/demolition, elevation, relocation or retrofitting of existing buildings. These are the primary activities funded by FEMA mitigation programs.
3. Natural resource protection: These are activities intended to reduce intensity of hazard effects as well as improve the quality of the environment for people and wildlife. Examples include wetlands restoration, buffer zones, setbacks, easement purchases and forest management practices (effective for flood and wildfire).
4. Emergency Services: Activities to ensure continuity of emergency services – not the deployment of emergency services during or after an event. Examples include critical facilities protection (hospitals, power and water supply, etc) to a high standard so these facilities are operational and accessible during extreme events.
5. Structural measures: Activities include development of large, highly engineered hazard reduction structures. Examples include levees, dams and debris basins.

The ASFPM is a leading advocate in the nation for the promotion of non-structural flood loss reduction measures, while recognizing that we must have all available mitigation tools at the ready to address complex flooding problems. Non-structural measures focus on making existing and future development more resilient to flooding or to preserve (restore) floodplain functions so that existing developed property will experience less damage or at least not increased flooding.. Techniques such as planning, zoning, building codes, acquisition and relocation of flood prone structures, and stream restoration that modify human development and restore natural systems are considered non-structural, while structural measures include highly engineered solutions such as dams, levees, and floodwalls that modify natural riverine and coastal systems. Further, ASFPM believes that integration of structural and non-structural mitigation approaches can be very effective. For example, dams, channels and levees often are built to contain river flows, but these structures cut off human access to the river and can result in catastrophic damage when the structures are breached or overtopped. A more balanced approach would be to build the levee but site it farther away from the river, allowing more space for natural conveyance and storage of flood waters and less stress and erosion of the

levee. Then, this protection would be supplemented with additional non-structural techniques such as purchasing and removing buildings that are too close to the water, requiring other buildings to follow strict building codes, and requiring the purchase of flood insurance by those who occupy the area behind the structure where residual flood risk remains. Flood insurance is the only means to provide financial protection to the homeowners single largest investment—their home.

Hazard mitigation is performed year around. Planning is done continually, building and land use codes are administered and enforced every day, and property protection / structural measures occur when the need arises. Some tools like FEMA mitigation projects are very effective after a disaster event because property owners are more receptive to mitigation actions. Similar are building codes; however, there can be community reluctance to enforce the codes and/or a much greater willingness to relax the building standards after a disaster. While communities think this helps property owners recover, in reality, it simply sets them up to experience the same disaster again.

While mitigation needs to be woven throughout the nation’s emergency management system’s other major components: preparedness, response and recovery, hazard mitigation is also its own element and organizationally needs to be recognized as such. ASFPM remains concerned that within the Department of Homeland Security, and to a lesser extent FEMA, hazard mitigation has not become a robust element in the overall way we address natural hazards in this country. Efforts, for example, to eliminate programs such as Pre-Disaster Mitigation and merge them with terrorism preparedness programs are shortsighted and reflect a fundamental lack of understanding of the importance and need for strong promotion of natural hazard mitigation.

- **ASFPM applauds FEMA’s efforts to better define hazard mitigation through the creation of the mitigation framework and operational plans through PPD-8; however, also cautions that mitigation cannot solely be viewed through a preparedness lens and that ultimately PPD-8 is for a national preparedness program in the nation. ASFPM supports FEMA’s effort to weave mitigation throughout all the PPD-8 Frameworks.**

There are several support services or systems upon which non-structural mitigation decisions and policy depends. As mentioned before, hazard mitigation is a year around commitment by both states and communities. Yet there is no provision for dedicated, ongoing funds for hazard mitigation at the state level except for state management and administrative costs when a project is awarded by FEMA. There is still a gap where there is a need to build state capability to manage and oversee mitigation efforts.

- **A partnership arrangement should be developed and modeled after the NFIP’s Community Assistance Program, but strengthened to allow for the development of permanent state capability to implement and manage hazard mitigation programs. Such a partnership could include incentives (cost-shared funding) and disincentives (state eligibility for disaster assistance programs) to ensure the state develops and maintains long-term capability.**

Another of these support systems is the continued provision of flood data. The risk assessment portion of a mitigation plan depends on flood maps and detailed flood elevation data to assess where hazards exist and to what extent they will affect an area. Flood mitigation projects depend on these data to determine cost-effectiveness and formulate the proper mitigation solution.

- **Federal hazard mitigation programs should recognize the importance of streamgaging and flood hazard mapping and ensure that National Flood Mapping Program and the USGS National Streamflow Information Program (NSIP) are fully resourced to authorized levels.**
- **ASFPM is concerned about the recent effort by FEMA to utilize a new THIRA approach that appears to substitute high quality hazard data with more subjective criteria when developing risk assessments in communities. This method appears to not be a scientifically sound approach and could result in very misleading data upon which a community is making decisions. Even more concerning is the lack of alignment of grant funding criteria for natural and terrorism hazards which we are being told will not allow funding for natural hazard mitigation if the grant funding is combined (because all grants must be tied to terrorism).**

## **Mitigation is an Excellent Investment for Taxpayers and Property Owners**

Natural hazard mitigation saves money. Mitigation represents a societal investment, not a cost. The benefits of this investment are clearly evidenced in several ways:

- Averts loss of life and injury to people.
- Reduces damages to public and private property.
- Lessens expenditure of resources and exposure to risk for first responders.
- Reduces costs of disaster response and recovery.
- Accelerates recovery of communities and businesses affected by disasters.
- Enhances community resiliency.

An investment now will continue to pay dividends year after year into the future.

The most widely cited study on the cost effectiveness of hazard mitigation was conducted in 2005 by the Multi-Hazard Mitigation Council of the National Institute of Building Sciences. It showed that a dollar spent by FEMA on its hazard mitigation programs provides the nation with \$4 in future benefits. For flood disasters, benefits were \$5 for every \$1 invested. In another study, FEMA estimated that the NFIP's standards for new construction are now saving an estimated \$1.2 billion annually in flood damage avoided. These standards are a combination of building and land-use requirements. FEMA projects that if buildings built prior to current building code standards were mitigated to just minimum NFIP standards, flood damage would be reduced by 80%.

A lesser known study shows the cost effectiveness of building standards that exceed the minimum standards of the NFIP. In this study, as part of the comprehensive evaluation of the NFIP completed by the American Institutes of Research in 2006, it was shown that incorporating extra “freeboard” was extremely cost effective when new buildings in flood prone areas are constructed. (Freeboard is a level above the 100-year base flood elevation (BFE) that the lowest floor of a building is constructed to as an extra protection measure). At present, about half of the 22,000 NFIP participating communities have 1,2 or 3 foot freeboard standards. The cost of extra freeboard is very small (.25% - 1.5% per extra foot of the at BFE building cost for masonry type foundations) and for many buildings this extra cost can be recouped from flood insurance premium reductions alone. For some buildings, the full cost can be recouped in as little as 1-2 years. Not only do owners receive a discount on flood insurance premiums, they have significantly reduced their risk of property damage due to flooding and given themselves a buffer if flood conditions change. With better building standards, property owners are more resilient at minimal costs, community response and recovery costs are lessened, and the cost to the federal taxpayer is minimized though the decreased need for disaster assistance.

## **Effective Non-Structural Mitigation Tools: Mitigation Grant “Project” Programs**

Many of the high risk flood areas of the nation include existing, older construction. Buildings may not be elevated to protect against flooding or were constructed using masonry methods that fall short of modern earthquake codes. Older stormwater management systems often combine sewage and stormwater and/or do not have capacity to handle the volume of development or intense precipitation events. Essentially, these buildings and infrastructure were constructed before modern codes were published establishing any type of standards related to natural hazards. For the older “built” environment, the mix of mitigation tools that are most effective include comprehensive and hazard specific planning, technical assistance, mitigation grant programs, structural measures and hazard insurance.

## Mitigation Success Story – Arnold, Missouri Buyout Project

After the 1993 Mississippi River flooded hundreds of homes and caused several million in damage in Arnold, Missouri (pop. 19,965), the city had purchased over 202 homes and 155 sites for mobile homes by the end of 1995. A combination of FEMA, CDBG, and other funding sources was used. By 2008, over 322 homes had been acquired. When flooding occurred that year, a total of \$12,000 in damages resulted. As part of the buyout

	<u>1993 Flood</u>	<u>1995 Flood</u>	<u>May 2002 Flood</u>
Sandbagging sites in Arnold	60	3	0
FEMA Public Assistance to Arnold	\$1,436,277	\$71,414	\$0
Applications from Arnold for Individual Assistance	52	26	1

process, buildings were bought, demolished, and the remaining property was deed-restricted as open space. Arnold has repeatedly flooded with similar sized floods since 1993; however, now flooding is mostly an inconvenience, and the long term cost to the U.S. taxpayer is essentially zero. The key to the success of this project and ongoing minimization of taxpayer cost was the permanent deed restrictions on the acquired properties.

Both pre-disaster and post disaster mitigation programs are important. Pre-disaster mitigation allows ongoing mitigation activities outside of a disaster scenario. It is the key tool for communities which do not often suffer declared disasters. The New England states, for example, indicate that pre-disaster mitigation is essential to their loss reduction efforts and resulted in significantly reduced losses from Hurricane Irene. The state and local disaster mitigation plans required by this Committee in the Disaster Mitigation Act of 2000 led to enhanced effective use of the Hazard Mitigation Grant Program (HMGP) after declared disasters. Better integration of HMGP in the response and recovery phases is needed, but post disaster mitigation takes advantage of greater openness to mitigation options following disaster-related damages.

Mitigation grant projects are an important tool used across the country, especially in older communities that have existing inventories of older at-risk buildings and infrastructure. Demand for these programs continues to far exceed available resources. A poll of State Hazard Mitigation Officers found that demand ranges anywhere from 3 to 10 times the available funds.

- **ASFPM believes that cost-shared , pre and post disaster mitigation grant programs and projects must continue to be part of the nation’s toolbox to reduce losses and costs from natural hazards**



## Effective Non-Structural Mitigation Tools: Technical Assistance

Another effective mitigation approach in the “built” environment is technical assistance. FEMA’s mitigation programs, as well as some programs from the United States Geological Survey, the US Army Corps of Engineers, the National Park Service, the Fish and Wildlife Service and the Natural Resource Conservation Service can help local mitigation managers be successful. For example, FEMA’s Community Assistance Program (CAP) is funded from within the NFIP but provides funding to states to provide technical assistance to over 22,000 communities that participate in the NFIP. Similarly, FEMA’s National Dam Safety Program provides funds for technical assistance and training. The US Army Corps of Engineers has several technical assistance programs including Floodplain Management Services (FPMS), Planning Assistance to States (PAS), and Silver Jackets. Still the sum of all of these technical assistance programs is quite small especially compared to the larger grant and construction project programs, yet demand is quite high. The Small Business Administration allows for hazard mitigation under its disaster loan programs but they are not well known.

- **Modest but effective technical assistance programs should be expanded to better educate and provide assistance to communities and the public regarding hazard mitigation opportunities and options.**

## Effective Non-Structural Mitigation Tools: Hazard Insurance

Hazard insurance is also an essential mitigation tool. It is effective for both old and new construction; however, it is vitally important for at-risk older development. Hazard insurance has several benefits including: Mitigating economic losses and reducing disaster payouts, raising awareness of the presence and severity of a hazard, ensuring that those at risk pay to mitigate their own economic losses, reducing potential liability and litigation expenses, and rewarding policyholders and communities who take additional steps to reduce vulnerability.

Just a few weeks ago, the Congress passed reforms to the National Flood Insurance Program (NFIP), including removal of subsidies within the program. The provision of insurance through the NFIP involves the “quid pro quo” of community adoption of floodplain management ordinances which address both land use and building standards. ASFPM believes that the removal of subsidies within the NFIP will push property owners and communities to explore other mitigation options making both technical assistance and mitigation grant programs even more important than they are now.

As part of the debate preceding the passage of the bill there was much discussion on how to handle “residual risk” areas. While there is no official definition, ASFPM believes these areas to generally be those that have some element of risk, usually behind a levee, or downstream of a dam – either in areas that would be inundated from releases through emergency spillways or in failure zones.

As our nation’s infrastructure ages and development increases, it is important to know where these areas are, and how to minimize both the financial risk and risk for injury/loss of life.

## **Effective Non-Structural Mitigation Tools: Planning and Other Land Use Measures**

Mitigation tools such as planning, building codes and other land use measures are most effective in addressing the “unbuilt” environment, or future development. Dealing with future development is essentially a process of deciding where and how to build. Communities have the authority to lead this decision making process. So that communities do not succumb to disasters, they must become resilient and sustainable. The key to sustainable and resilient communities is where and how development takes place. There “where” is land use planning and the “how” is good building and development codes. Both are important but start with land use. Smart development in dumb places is not sustainable.

Communities have long recognized that some areas are not appropriate for uses that would be costly to repair or replace such as homes and businesses, or critical uses, such as emergency operations centers, hospitals, or centers for local governments. In this way local land use, zoning, and development review help assure that new growth is sited appropriately and that communities are more resilient, less dependent on federal assistance, and more likely to recover completely from a flood.

Planning for flood risk reduction has been propelled into greater prominence as a result of the Disaster Mitigation Act of 2000. Before the planning requirements of the Disaster Mitigation Act, local mitigation projects were often implemented in a haphazard way and without coordination with any type of local plans. The mitigation planning now required at least forces entities wishing to implement FEMA mitigation projects to do so in the context of a larger community plan. Still, more can be done.

The planning process and plan elements required by FEMA as part of these mitigation plans are robust and should ensure plan longevity. All communities and states have either developed plans and will be facing the need to revise them, are just beginning to plan, or have not yet done so.

- **Developing plan update guidance should be a high priority for FEMA. Such guidance should generally take the view that planning and updating mitigation plans is an iterative and long term process—while encouraging continuous improvement of the plans, the bar should not be set at an impossibly high level.**
- **An independent evaluation of state and local hazard mitigation plans should be conducted, to determine whether they are actually guiding local hazard mitigation activity or are merely shelved once the requirement is fulfilled, and determine what changes in the planning standards, processes, and guidelines are necessary.**

The amount of mitigation planning that has been achieved nationally over the past decade has been significant. As planning itself is an iterative process, ASFPM believes that the plans should get better and become more effective over time. However the mitigation community in the nation is concerned about the Administration’s recent budget to zero out the Pre-Disaster Mitigation (PDM) program. PDM is a significant source of mitigation funds for mitigation planning that is not redundant to other sources that may only be available after a declared disaster. In fact, over half of the states do not have disasters declared frequently enough to use the Hazard Mitigation Grant Program as an alternative source for mitigation planning assistance.

Another area that needs strengthening is land use, planning, and development standards for roads and similar infrastructure. While the US Dept. of Transportation may have standards to ensure high capacity roadways are resilient such as the Interstate highway system, at the state and local levels, no consistency of standards exists and the nation is paying to repair and replace these structures over and over again through disaster assistance funding.

A 2005 report by the American Lifelines Alliance in partnership with ASFPM and the American Public Works Association developed five case studies of counties to document decision-making factors and processes used to address flood risk in managing local road systems, and to identify effective practices for mitigating flood impacts. It concluded that rural road departments are constrained by limited resources, expertise, and staff, that consistency in post-disaster assistance was needed, that there were a wide range of state requirements that are specific to flood resistance and road construction and reconstruction, and that road departments are generally open and willing to learn about new and effective approaches. The report made several recommendations including the development of a Model Manual of Flood Mitigation Guidance for Local Road Systems among others.

## **Effective Non-Structural Mitigation Tools: Building and Development Codes**

While the first building codes appeared in the United States in the 1650s, it wasn’t until the early to mid nineteenth century that national model codes were established. The first national code to include seismic provisions was published in 1927. Since that time, building codes have become much more common across the United States. In the 1990’s the three leading code groups came together to form the International Code Council and created the first International Building Code (IBC) in 1997 and International Residential Code in 2000. This was meant to be the single-consensus based code to be used in the country. However, the National Fire Protection Association, which initially participated in the IBC process, ultimately chose to develop an alternative set of consensus codes and standards.

In the past two decades, “green building practices” have emerged. The term “green building practices” commonly refers to products or practices implemented to achieve a level of environmental

performance above a minimum or traditional design. These are generally practices that are assigned credit under a green building rating system. The term “sustainable building design” refers to a broader concept that includes sustainability principles and considers and addresses risks associated with natural hazards. Sustainable building design concepts are increasingly being incorporated into residential building design and construction through the green building rating systems, but much work remains to be done. In fact, one cannot assume just because a jurisdiction adopts a green building code, or that a certain building is certified as a “green” building that it has actually incorporated the necessary standards to withstand natural hazards to which it is subjected.

For example, the major national green building standard for both new and existing buildings is the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. LEED is a set of voluntary, consensus-based, national standards for constructing sustainable buildings, including site selection and design, durability, maintenance and system efficiency. But, LEED itself does not require compliance with any building code. Many jurisdictions in the U.S.—including some in disaster-prone regions such as the Gulf Coast and the New Madrid Seismic Zone—do not have adequate building codes, meaning that it is possible to obtain LEED certification and not even address life safety criteria, much less long-term durability. At the same time, LEED is to be commended for elements such as not allowing building on lands below the 100-year floodplain as a way to increase disaster resilience.

## **Issues and Policy Considerations Related to Building Codes**

While ASFPM strongly supports building codes as one mechanism to mitigate the effects of natural hazards, it is important to have a realistic perspective of how they are adopted and administered currently so that any new policies are effective.

The first issue is the voluntary nature and wide variability of building code adoption – if they can be adopted at all. Periodically, ASFPM evaluates state and local floodplain management programs, most recently in 2010. State Floodplain Managers indicated that 76% of states had adopted building code. 46% of the states that do not require local jurisdictions to administer a building code do allow communities to adopt a building code of their choice. Even when building codes are adopted in a state, the consensus based approach means that critical provisions could be omitted from the state code entirely.

Ohio serves to illustrate these points well. The State of Ohio has adopted the International Codes. In fact, they are required in all communities for all 3+ family residential, commercial and industrial buildings. However, the Ohio residential code is optional in communities for 1-3 family dwellings. Furthermore, in 2012, when the Ohio Residential Code was updated, “controversial” provisions of the International Residential Code were omitted, and at the urging of builders, the new code provides contractors two ways to meet new energy requirements: either by following the

International Code Council guidelines or by following an alternative set of guidelines designed by builders to achieve the same energy efficiency.

State adoption does not necessarily equal local adoption of codes, or enforcement of codes. Over the past 25 years, FEMA has deployed Mitigation Assessment Teams (MATs) after major natural disasters to better understand how and why buildings have failed from natural hazards. MAT reports have historically found that construction often does not meet the level of performance targeted by model building codes. Whether this is a deficiency in the code or lack of enforcement is not known, however the MAT report after Hurricane Ike indicated that residential buildings without adequate elevation, proper construction, and proper foundation selection were found to have widespread failures. Anecdotally, many local floodplain managers indicate that code enforcement can be difficult. Everything from political pressure, misuse of the variance process, to inadequate legal counsel can impact a community's ability to enforce its regulations. One way to measure building code enforcement is The Building Code Effectiveness Grading Schedule (BCEGS®) which assesses the building codes in effect in a particular community and how the community enforces its building codes, with special emphasis on mitigation of losses from natural hazards.

An analysis of the related BCEGS data shows a slowing trend of community-level code adoption — even during the construction boom. In 2002, the year before code groups published the 2003 code, 90 percent of departments adopted the 2000 code. In 2005, the year before the industry published the 2006 code, 50 percent of departments had moved to the 2003 code. Then in 2008, the year before the industry published the 2009 code, slightly more than 40 percent had moved to the 2006 code. It appears that just 30 percent of code agencies will adopt the 2009 code before the publication date of the next edition.

### **ASFPM Thoughts on the Effective Use of Building Codes in Hazard Mitigation:**

**Model codes are consistent with minimum national standards, but do the standards achieve the needed amount of loss reduction?** There is evidence of the value of building codes in the historical data from the NFIP through which some communities have been enforcing building standards for over 40 years. Also, the flood provisions in the model building codes are consistent with the NFIP standards. However, the minimum standards of the NFIP have not been updated in over 25 years — and much loss experience has been learned. Also, the nature of flood risk is changing. Are these minimum standards enough? ASFPM believes that steps should be taken to encourage (incent) states and/or communities with unique hazards or long term vision to implement standards beyond those found in the International Codes. ASFPM has several detailed recommendations on how to strengthen the NFIP minimum development standards, from increasing freeboard to critical facility construction.

**Both incentives must be created and perverse disincentives must be eliminated.** As part of the 2006 evaluation of the NFIP, one line of inquiry related to compliance with the minimum standards

of the program. It was determined that participation in the Community Rating System (an incentive program that gives discounts of up to 45% of flood insurance policy premiums) did not affect the overall compliance rate with floodplain management standards (research showed that 63% of buildings were fully compliant). However, that doesn't mean incentives don't work – but they must be carefully crafted. A more effective approach, ASPFM believes, is using both incentives and eliminating disincentives. For example, if a jurisdiction hasn't adopted a building code with natural hazard resiliency provisions, should they even be eligible for programs such as HMGP, Public Assistance, or disaster assistance in general? If a community has adopted and is enforcing such a code, should they be the ones to receive the extra incentive? The way our nation's disaster assistance programs are set up today, communities and states get rewarded for doing little to nothing to increase their resiliency. Another incentive idea is to implement a sliding cost share for rewarding those communities doing the right thing, whether for hazard mitigation funding or even disaster relief.

**Local capacity (enforcement training, etc.) is key to successful implementation of building codes.** Due to the way many building departments are funded, the economic downturn has had a significant impact on local capacity. Many budgets rely on revenue generated by permit fees. Slower construction since 2008 has resulted in significant downsizing of local building departments. There is also concern about increased building costs, so it is understandable that enforcement can be challenging in difficult economic times. Evidence indicates, however, that increased building costs are actually quite minimal while the savings can be significant in damages avoided. It is important that the federal government (taxpayers) not be providing incentives for communities to make decisions for short term economic gain that results in greater long term costs, especially to the federal taxpayer for future disaster relief and recovery. Having a building code is important, but it must be enforced to be helpful. Enforcement training and education for code officials and builders would promote effective enforcement.

It is encouraging that the recently passed flood insurance reform legislation (as part of MAP21), authorizes use of Community Development Block Grant (CDBG) funds for building code administration grants to educate, formulate, implement and enforce local building codes over the next two years. ASPFM has long supported these types of training and education efforts.

**The challenge of jurisdictions that do not have the authority to adopt and enforce building codes needs to be addressed.** There is no guarantee that when a state adopts a building code, a community will follow suit. Even worse, some communities have neither the authority to adopt or enforce building codes. This should operate as an incentive for states to grant this authority to all jurisdictions, (counties, cities, parishes, etc.) Incentives are key—either for cost share or priority for funding. It is difficult to provide incentives for states with codes, since over half do have them —this may be an instance where disincentives for having no code are appropriate.

ASFPM appreciates the Committee's interest in encouraging adoption and enforcement of statewide building codes. H.R. 2069, The Safe Building Code Incentive Act, is a good step in the right direction through offering an incentive for adoption and enforcement of nationally recognized building codes. It has the dual benefit of both encouraging effective use of building codes and providing additional funds, through the Disaster Relief Fund, for mitigation activities. We do suggest that, to be more effective, the legislation define what is meant by "statewide", making clear that the term includes all buildings and all local jurisdictions.

## **Conclusion**

An article on global disasters from the January 14, 2012 edition of The Economist was titled "Counting the Costs of Calamities: Death rates from natural disasters are falling; and fears that they have become more common are misplaced. But their economic cost is rising relentlessly." This has certainly been the trend in the United States as well.

The good news is that over the last few decades, we have developed and tested various mitigation tools and have proven that they work. Given the increasing costs of natural disasters, the predictions for more frequent and more severe storms and weather conditions, and the severe budgetary constraints the nation faces, getting effective mitigation accomplished is essential.

The Association of State Floodplain Managers appreciates this opportunity to share our observations and recommendations with the Subcommittee. For any further questions on this testimony contact Chad Berginnis, ASFPM Executive Director at [cberginnis@floods.org](mailto:cberginnis@floods.org) (608) 274-0123 or Meredith Inderfurth, ASFPM Washington Liaison at (703) 448-0245.