



Association of State Floodplain Managers, Inc.
2809 Fish Hatchery Road, Suite 204 • Madison, Wisconsin 53713
www.floods.org • Telephone 608-274-0123 • Facsimile 608-274-0696

Final Testimony for the Record

Flood Preparedness and Mitigation: Map Modernization, Levee Inspection, and Levee Repairs

Before the
Disaster Recovery Subcommittee
State, Local and Private Sector Preparedness and Integration Subcommittee
Senate Committee on Homeland Security and Government Affairs

Sam Riley Medlock, J.D., CFM
Association of State Floodplain Managers

July 28, 2010

Introduction

The Association of State Floodplain Managers (ASFPM) thanks both Subcommittees, Chairwoman Landrieu, Chairman Pryor, Senator Graham, Senator Ensign, and members of the Subcommittees for your attention to the nation's flood risk, flood map, and levee issues.

As we all know, these issues have generated significant interest among the American public lately. They point to the real need to better integrate the nation's flood risk management policies and programs. This offers an opportunity to meet the challenges of flood hazard identification, aging flood "control" infrastructure, flood risk management approaches, flood insurance, and flood insurance affordability in a constructive manner – to better protect lives and property and reduce costs to taxpayers of flood disasters. We are very pleased to have the chance to share some of our thoughts on the challenges presented. Today, our testimony addresses the following:

- I. Challenges & Opportunities: Levees, Maps & Insurance**
- II. Levees: One Tool To Managing Risk**
- III. Maps: Hazard Identification (with a caveat emptor)**
- IV. Flood Insurance & Residual Risk**
- V. Recommendations & Conclusion**

The Association of State Floodplain Managers, Inc. (ASFPM) and its 29 Chapters represent more than 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 work to reduce our Nation's flood-related losses. Our state and local officials are the federal government's partners in implementing flood mitigation programs and working to achieve effectiveness in meeting our shared objectives. Many of our state members are designated by their governors to coordinate and implement the National Flood Insurance Program, and many others are involved in the administration and implementation of FEMA's mitigation programs. For more information on the Association, please visit our website at <http://www.floods.org>.

I. Challenges & Opportunities: Levees, Maps & Insurance

By holding this hearing on both levee and flood map issues, the two Subcommittees have recognized that they are interrelated issues. ASFPM appreciates that recognition and would add the further interrelationship with flood insurance and, specifically, affordability of flood insurance. Often because of concerns about the financial impact of requiring flood insurance, there is a very unfortunate tendency to avoid identification of risk and to focus on flood control structures as the only approach to dealing with flood hazards, despite their limitations and residual risk that still exists behind levees.

In fact, we must recognize that areas behind levees are at risk from flooding. As much as it may be desired to wish that the risk didn't exist, as much as some might find it distasteful to print a notice on a flood map that flooding can occur behind levees, as much as some might not want to even map these risk areas showing Americans that there is danger to their families and businesses in being in such areas, and even if some want to make policies to make it easier to ignore the risk (by not having mandatory purchase behind levees), the risk exists. The risk existed before the great 1927 Mississippi River flood breached levees all along the lower Mississippi (and ironically after victory had been declared over the river), the risk existed before the 1993 Missouri and Mississippi River flood (which caused more than 100 levee failures), and before Katrina. The risk still exists. It is unacceptable to ignore this risk. Levees have failed, levees are failing, and levees will fail in the future. Our policies, programs, and most importantly, our actions must recognize this risk.

The problems with these three elements, maps, levees and flood insurance, have crystallized to create an opportunity to better manage flood risk, to better protect lives and property and to help communities and individual citizens to restore their economic and personal lives more fully and quickly after a flood disaster. This is because we are in the process of gaining a better understanding of the true status and condition of levees, flood walls and other flood control structures. Acknowledgement of the cost of repair and ongoing operation and maintenance of such structures is leading to consideration of more non-structural ways of managing flood and storm water to provide less costly protection while also using natural floodplains and gaining environmental benefits. Concern about flood insurance cost has become apparent as an important reason for concern about levee repair and updated flood maps.

If policy makers can seize the opportunity this situation presents, it could lead to:

- Better coordinated (federal, regional, state and local) flood risk management and community planning;
- Consideration of a full range of measures to address flood hazards: structural, non-structural, a mix of both, insurance that reflects the true risk in its actuarial rates;
- Improved understanding that all levees will fail or overtop at some point, so having multiple approaches to buying down the risk is important; and
- Innovative concepts and ideas for making insurance more affordable while also allowing use of actuarial rates to reflect true risk.

Unfortunately, two federal policies have driven communities in a “race to the water’s edge:”

- Principles and guidelines for federally-supported water projects that provide significant funding for large-scale flood “control” structures, that are costly to maintain and that fail or become overwhelmed with catastrophic consequences, and
- The so-called 100-year, or 1%-annual-chance, standard that originated in the National Flood Insurance Program as a policy rating standard, and that was never intended but is incorrectly perceived to be a standard for safety by property owners and communities.

These two policies combined to create the perfect storm of aging, neglected structures and communities that grew without allowing for margins of error and the dynamic nature of the waterways they share with neighboring communities. At present, four significant policy initiatives are underway that can contribute to development of integrated flood risk management for the nation.

- A National Committee on Levee Safety was created by the Water Resources Development Act of 2007. That Committee has completed its report to Congress and is in the process of developing legislative recommendations pursuant to that report.
- The FEMA Administrator has launched a major “Re-Thinking the NFIP” work group to collect and analyze ideas large and small for the design and implementation of the NFIP and to develop legislative recommendations.
- The Administration has recently re-established the Federal Interagency Floodplain Management Task Force – an entity which had been dormant for nearly 15 years but which has great potential to better integrate policy; and
- The Council on Environmental Quality has been leading work on redesigning the fundamental Principles and Guidelines of the Army Corps of Engineers and to make the new Principles and Standards applicable to all federal agencies dealing with water resources.

II. Levees: One Tool To Managing Risk

The nation has received many “wake-up calls” on the consequences of overreliance on levees and the failure to prepare those who live behind them: the 1993 Midwest Floods, 2005 levee failures in and around New Orleans, the 2008 Midwest Floods, and more recent disasters that claimed lives, homes, and businesses, and destroyed the economic vitality of many communities. However, many other levees are in far worse shape than those in New Orleans in 2005, and the clock is ticking largely unknown to the families and business at risk, or even to many community officials.

There are five main components to the problematic use of levees in the United States today.

1. Communities and states erroneously think flooding is a federal responsibility.
2. We don't know how many miles of levees there are or their condition.
3. The NFIP's use of the inadequate 100 year flood standard with no attendant means to address the residual risk behind the levee has led to less protective levees and encouraged development behind them.
4. Residual risk behind or below flood control structures is by and large not fully understood, leading to a false sense of security for those living behind levees.
5. Risks are increasing behind levees because development is adding to the consequences of failure or overtopping; especially those built originally as agricultural levees and are now “protecting” developing areas.

The Need for a National Flood Risk Management Policy and Framework

We will soon enter an era of levee “triage” – the process of prioritizing federal response to flood risk associated with levees and rationing scarce federal dollars on multiple-objective risk reduction projects that may include floodplain restoration, reconfiguration of structural systems, and combinations of approaches to make the best use of limited public resources. Response to the levee crisis – and smart investment of limited public dollars - must entail evaluation of the full range of measures to reduce risk, including flood insurance, changes in land use, and strategic relocation from areas of greatest risk. Such evaluation will require national policy and leadership in flood risk management, beyond the scope of a levee safety policy or program. A complete inventory of all of the nation's levees – federal, nonfederal, and private – is the first step to conduct the levee triage that will be necessary so that everyone, including Congress, understands the scope of the crisis we face.

Although the National Levee Safety Act of 2007 provided for the development of a policy framework for levee safety, the National Committee on Levee Safety struggled to identify and operate within its mission parameters in a policy vacuum; with no national flood risk management policy to guide decision-making beyond the levee footprint. While the Committee recommendations on governance, engineering, and outreach help guide decision-making once the decision is made to build a levee, the report provides no insight to guide the important decision of whether or not to levee an area to protect against floods, or how a levee may be combined with nonstructural measures or if a levee should be built at all.

ASFPM strongly supports the NCLS recommendation requiring that properties that receive some protection by a levee be insured against flood damage to help address the residual risk that exists behind every levee. This requirement will reduce economic exposures, increase understanding of residual risk behind levees, and place the responsibility for levee-related flood risk on those who live with or

contribute to that risk. However, Congress needs to take the following factors into consideration in crafting this requirement:

- (1) Current mandatory purchase guidelines exempt from the flood insurance requirement those properties that do not have a federally backed mortgage. As a result, homes and businesses that are owned outright have no mechanism for ensuring that flood insurance is purchased and maintained. One option would be to require insurance as a condition of receiving a local certificate of occupancy, accessing local utilities, or other means currently employed to enforce building codes for other safety issues. Congress might also require a study of a long-term (20 years or more) flood insurance policy that attaches to the property.
- (2) Risk-based premiums could have a significant effect on some low income families and small businesses. An approach that is gaining support would be to allow levee districts or communities to obtain group flood insurance for everyone behind their levee. Another option would be making vouchers available through HUD to support the transition to risk-based flood insurance premiums.

Although the NCLS Report identifies minimal criteria for participation in a National Levee Safety Program and potential access to new pools of federal funds, the measures identified do not appear sufficient to achieve shared responsibility, accountability, and reduced risk. As emphasized above, existing federal programs encourage inappropriate reliance on levees, undervalue nonstructural risk management solutions, and provide few consequences for unsound local land use practices. For these reasons, the new system of incentives and disincentives needs to address each of these existing policy flaws, target the right audience, and ultimately change how states and local governments, as well as citizens, view and rise to their responsibility to prevent flood damage.

The NCLS report to Congress calls for a new federal fund to match state and local dollars to help address the many levee deficiencies anticipated across the nation. Despite enormous past investment in flood “control” structures, that spending has been outpaced by development in risky areas and development in the watershed that increases runoff and flooding, and by the steady deterioration of those structures. As the public grows to recognize the risks associated with levees, communities are working to evaluate the various actions they can take in response to those risks: levees can be repaired and improved or set back from the river to relieve pressure and erosion on the levee; homes, businesses, and infrastructure at risk can be relocated to reduce risk and restore floodplain function; waters can be detained upstream; and measures can be combined to achieve the most effective results with scarce public dollars. The NCLS recommends, and ASFPM supports, creation of a National Levee Rehabilitation, Improvement, and Flood Mitigation Fund to provide cost sharing support for state and local efforts to address levee deficiencies and reduce flood risk.

Along with the challenges of the unknown levels of protection of levees and of their condition, many local governments are facing the de-accreditation of their levees, for purposes of recognition under the NFIP. More than 300 (of over 900) communities are facing the impending expiration of agreements regarding their Provisionally Accredited Levees, or PALs. The result of having a levee that is not accredited as providing flood protection is that the area behind that levee will be mapped in the “without-levee” condition and will be designated a Special Flood Hazard Area subject to appropriate flood insurance requirements and land use measures to prevent and mitigate flood damage.

Unfortunately, an issue has emerged in recent years that hinders the potential effectiveness of this existing system of incentives to prevent harm: the misperception that flood insurance is an unnecessary burden on those living behind levees. Levees are designed to provide only a specific level of protection. They can fail in any flood, or be overtopped in larger flood events, which is why relying solely on levees leaves

those living behind them subject to significant and poorly understood risks. Everyone should understand the risk to life and property that remains behind levees—risks that engineers acknowledge that even the best flood-control system cannot completely eliminate.¹ In its recently adopted Resolution on levee safety, the American Society of Civil Engineers amplified the need for public understanding and better management of the nation’s flood risks, emphasizing that:

[R]isk communication is especially important in situations such as levee construction where the community is often emboldened by an erroneous sense of security to greatly increase development in areas protected for a time by levees; and at the same time the consequences of such failure have dramatically increased due to flood depth and velocities which accompany such failures.

III. Maps: Hazard Identification (with a caveat emptor)

The purpose of FEMA’s mapping program is to provide people living and working behind levees with appropriate risk information so that they can make informed decisions to minimize economic loss, damage, and loss of life. As noted above, the 1%-chance standard for flood insurance rating purposes is not a safety standard. Although a newly imposed requirement to purchase flood insurance is an additional cost for those living at risk, it is only appropriate that those at risk be informed and insured and bear part of the cost of living at risk. The affordability problem must be dealt with outside of identification of risk.

The poor condition of much of the nation’s infrastructure, including levees, dams and other flood control structures, as well as stormwater facilities, has become more evident. More accurate flood maps now reflect the unreliable flood protection of levees and the effects of development by showing some areas as now in the 100-year flood hazard area (and, conversely, by showing about an equal number of structures as no longer in the 100-year flood hazard areas). It is important to note that almost as many properties are newly shown as out of a Special Flood Hazard Area (SFHA) as are newly shown as in the SFHA. Requirements for the purchase of flood insurance in areas newly shown as at risk of flooding are highlighting concerns about affordability of flood insurance.

As a former community and regional planner, I can speak firsthand to the importance of flood maps in reducing the loss of lives and property in floods. I can also speak to the need for local officials to be able to interpret flood maps, and understand that no map can ever predict exactly where floodwaters will go – the simple fact is that maps are based on models and the best available data. As engineering models improve and the body of data about a given basin grows, floodplain delineations can and do shift. This can be due to changes in hydrology, impervious cover, or other physical changes in the basin. However, it can also be due to the availability of new data that may more accurately depict how floodwaters would likely move through a valley. Ultimately, floodplain mapping is not a perfect science. It falls to communities to make informed and reasonable decisions about where and how to grow. Additionally, communities have specific responsibilities and opportunities through the mapping process.

A misconception promulgated at the July 28, 2010 hearing is that FEMA has some sort of an incentive to place more properties in Special Flood Hazard Areas (SFHAs) and require more property owners to purchase flood insurance. Again, although FEMA can directly refute this myth, ASFPM urges Subcommittee members, panelists, and the American public to understand that FEMA and the National Flood Insurance Program have no such incentive.

¹ See American Society of Civil Engineers Resolution 529, adopted Jan. 25, 2009, available at http://www.asce.org/pressroom/news/policy_details.cfm?hdlid=527.

On the contrary, FEMA and the NFIP are motivated solely to help communities and states identify and manage flood risk. NFIP's debt has resulted in part from the program's inability to charge premiums that are sufficient to build the capital that most private insurers have to offset losses or purchase private reinsurance. Under its authorizing legislation, NFIP must offer subsidized flood insurance premiums along with its full-risk premiums. The subsidized premiums, which represent only about 35 to 40 percent of the cost of covering the full risk of flood damage to the properties, account for about 23 percent of all active residential NFIP policies. Even with significant increases in NFIP participation, the NFIP probably could not collect enough to pay the \$766 million in annual interest and still pay down the debt. For this reason, ASFPM supports retirement of that debt.

IV. Flood Insurance & Residual Risk

ASFPM applauds the constructive examination of the National Flood Insurance Program (NFIP) launched by FEMA Administrator Craig Fugate. Administrator Fugate has recognized both the value of the NFIP and the need for a new phase of program growth and adaptation to changing circumstances. During a Listening Session on the future of the NFIP last November, Mr. Fugate challenged over one hundred invited participants to think creatively about the overall value of the NFIP, what it was intended to achieve, what it has and has not accomplished, and needed changes, both small and large. One example to encourage thinking big was whether or not the private sector could now handle and provide flood insurance. Mr. Fugate has subsequently charged a FEMA working group with assembling the recommendations, analyzing their merits and feasibility, and then developing substantive recommendations for moving the NFIP forward. The working group will evaluate not only the suggestions from the recent and additional Listening Sessions, but also the recommendations of a multi-year NFIP Evaluation led by the American Institutes for Research, the results of several Government Accountability Office Studies, Congressional Research Service studies, and other reports. FEMA expects to have a number of substantive additional reform proposals ready for Congressional consideration within the next two years, upon which we urge your timely consideration.

Flood insurance should gradually move toward being actuarially sound to reflect actual risk and enable market-based financial decisions about how much risk-related cost to assume. We recognize that there are affordability problems for some citizens living in at-risk areas; this is more prevalent in older riverine areas than in recently developed coastal areas or some newly developed areas behind levees. The de-accreditation of levees and more accurate flood maps have highlighted the affordability issue. We do not support efforts to delay issuance of flood maps, withholding accurate information about flood risk from citizens living and working in hazardous areas. We suggest that this issue presents challenges, but ones that can lead to constructive new growth and adaptation for the NFIP if addressed correctly.

For decades, levees have been extensively used to attempt to control floodwaters and to remove lands behind levees from the insurance and land use regulation requirements associated with the National Flood Insurance Program. People have built homes and businesses assuming that their property will never flood. Local officials and property owners generally are unaware of their residual risk.

As levees and systems are assessed to determine levels of protection and condition, many communities learn that their levees are not designed for large flood events, do not protect to the level of moderate floods like the 100-year, or will not perform as anticipated, and that additional actions are necessary to manage risk, including flood insurance and management of development in flood prone areas. Some communities blame the federal government for their predicament, demanding federal funds for larger levees, challenging the accuracy of maps, and denying that their citizens need flood insurance. However, history has taught us that floodwaters do not follow lines on a map, even the most accurate maps depict conditions that can and do change, and that those families who may least be able to afford flood insurance are likely those who need it most when those levees fail or overtop, which will happen at some point.

A number of very interesting ideas have emerged from academia, from a local levee district and from discussions among practitioners and policy makers. Most need further development, but they illustrate the kinds of ideas that could help to address the affordability issues and thereby facilitate better flood risk messaging, planning, and mitigation. Consider a number of interesting ideas to address the affordability problem.

- A program of flood insurance vouchers to assist with purchase of flood insurance issued through a means-tested program could be administered by the Department of Housing and Urban Development. An analysis might show it would be less costly for the taxpayer to pay for flood insurance vouchers for low income property owners for a limited time rather than have the taxpayer continue to pay disaster costs from the Disaster Relief Fund every time that a community floods
- Group flood insurance policies for areas behind levees. Levee districts could include the cost in their tax or fee structure and purchase the policy for those behind the levee. This would both signal to property owners that there is a residual risk while also protecting them in the event of levee failure or overtopping.
- Community group flood insurance for Special Flood Hazard Areas. Communities could purchase group policies for areas within their jurisdiction identified as SFHAs, thereby insuring everyone in those areas, not just those with federally backed mortgages. This would enable more rapid recovery of the area following a flood disaster. It would also offer an incentive to local officials to take steps to reduce losses and discourage unwise development because such actions would result in a lower cost group policy.

V. Recommendations & Conclusion

Ultimately, any national levee safety policy will function best within the context of an overarching national flood risk management strategy, and risks failure without it. The best engineering and evacuation planning will not be sufficient to ensure that existing levees and activities they are intended to protect are well managed, and that any new levees are appropriately selected as just one part of an overall strategy to manage flood risk in a given community. The Report of the National Committee on Levee Safety provides Congress with important insights to help drive at least some of the next steps for the nation. ASFPM and its members stand ready help Congress meet the challenges identified in the report that related to levees, and the overall physical, political, environmental, economic and social landscape in which they operate.

- 1. Flood insurance must be mandatory behind levees. Also, such flood insurance policies should be actuarially rated which will reflect the true risk – whether residual or something more.**
- 2. Flood maps must reflect flood risk accurately and must be published without delay to inform those inhabiting such areas – including areas behind levees.**
- 3. Communities choosing levees as their form of mitigation must accept responsibility for their choice and better mechanisms need to be developed to reward communities who take this responsibility seriously (better cost shares, eligibility for funding) versus those who don't.**
- 4. Congress should establish a National Levee Safety Program that incentivizes states to take responsibility since land use authority resides at the state and local levels.**
- 5. If discounted rates are applied for areas newly mapped as floodplain, FEMA could provide information as to eventual actuarial rates as well as information about mitigation actions which could be taken in the interim to reduce eventual actuarial rates.**

To actually reduce flood-related loss of life and property in the nation, we must move toward a true flood risk management framework with the nation's policies and programs. A comprehensive flood risk management program recognizes that:

- Managing flood risk is a shared responsibility among individuals, the private sector, community, and state and federal government;
- Flood risk is not isolated to the 100-year flood hazard area but is rather a continuum of risk that crosses all risk and jurisdictional lines on a map;
- Development and other activity outside the 100-year floodplain impacts flood levels—if we only manage activity in that 100-year floodplain, we miss opportunities to save lives and reduce flood damages and impacts;
- All structural protection measures will fail or be overtopped at some point by some flood event;
- Managing flood risk requires consideration of a mix of measures that may include structures, avoidance, and even retreat from high risk areas. Selection of only one structural measure, such as a levee, leads to severe losses in catastrophic events. Levee failure and high storm surge and 500-year events have shown the need for a mix of approaches including elevation, insurance and structures;
- Flood levels will increase in the future because development increases runoff; and observable trends indicate that storms are intensifying;
- Flood risk will increase as the natural resources and functions of floodplains are altered by development since this destroys the natural system that reduces the negative impacts of flooding;
- Flood risk management includes concepts such as identification of flood risk, community planning to steer development away from areas of risk, basing flood insurance on actual risk, vigorous promotion and support of hazard mitigation actions, and enabling citizens to better recover from disasters by being insured to reduce their financial risk.

The nation must carefully balance the issue of who benefits and who pays for development at risk. There are about 130 million housing units in the U.S. Of that about 10 or 11 million are in flood hazard areas. Of those in flood hazard areas, roughly half carry flood insurance. This means 90% of the population does not live in identified Standard Flood Hazard Areas, but continues to pay a large amount each year for disaster relief for flooding, rebuilding damaged infrastructure in flood areas, and may have to cover the \$18 billion debt of the NFIP. Yet those same taxpayers obtain few, if any, of the benefits of that development. This points out the need to tie program outcomes of the NFIP to these other programs like disaster relief programs and programs of HUD, DOT, USDA and others.

The Association of State Floodplain Managers appreciates the opportunity to share our views, recommendations, and concerns with you. We hope these observations, based on our collective experience in working to reduce flood risk in the nation and in serving as your partner, will be helpful in your work. We look forward to answering any questions you may have and assisting the Subcommittees in any way that you find helpful. I can be reached at: (608) 692-5010 or at: sam@floods.org. Our website is: www.floods.org.