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TESTIMONY

Association of State Floodplain Managers, Inc.

before the
House Committee on Transportation and Infrastructure

The National Levee Safety Program Act of 2005 HR 4650

Presented by:
Pamela Mayer Pogue, CFM, Chair
State of Rhode Island
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INTRODUCTION

The recent catastrophic disasters on the Gulf Coast and Florida, and the increasing flood damage elsewhere in the nation are reminders to the nation that we are susceptible to natural hazards – especially flooding – and that we must have programs, policies, and institutions that can adequately handle these events, efficiently use taxpayer money, and build a more sustainable future for our citizens. Nothing less than our nation’s prosperity and viability are at stake. The Congress and this Committee will be at the epicenter of this discussion, with an opportunity to make policy changes that can have importance and relevance far into the future.

Make no mistake about it, the potential for levee failure with catastrophic consequences and human suffering is not just a New Orleans problem. The levees in California are a disaster waiting to happen, where the consequences could equal that of the New Orleans catastrophe. An added hazard for California involves the earthquake risk, which can cause failure of even good levees. Every state has levees, we just don’t know where they all are, or the number of people and structures and critical facilities at risk behind them. Warning and evacuation of populations behind levees are a life safety issue that should be viewed as even more important than property damage. All of these consequences must be factored into a comprehensive levee safety program for the nation.

ASFPM appreciates the initiative of the committee, under the strong leadership of Chairman Duncan. **ASFPM supports HR 4650 in general, and provides suggestions on how we feel the bill might be strengthened.** We look forward to working with you to develop an effective approach to flood risk reduction. The ASFPM is also appreciative that the President’s budget for FY 2007 contains \$20 million for the Corps of Engineers to initiate a levee inventory, and this bill and our testimony will address effective approaches.

The Association of State Floodplain Managers, Inc. (ASFPM), and its 22 Chapters represent over 9,000 state and local officials and other professionals who are engaged in all aspects of flood loss reduction and floodplain management and hazard mitigation, including management, mapping, engineering, planning, community development, hydrology, forecasting, emergency response, water resources projects, and insurance. Many of our members work in communities impacted by hurricanes Katrina and Rita, or work with organizations that are assisting those communities to rebuild. All ASFPM members are concerned with working to reduce our nation’s flood-related losses and in rebuilding a safer Gulf coast. Our state and local officials are the federal government’s partners in implementing programs and working to achieve effectiveness in meeting our shared objectives of reducing the suffering and costs. For more information on the Association, please visit <http://www.floods.org>.

Thank you for inviting us to offer our views on the need for a levee inventory and levee safety program in the United States. The following testimony addresses:

- A. Key provisions for Reducing Future Flood Damages caused when levees fail
- B. A Reflection on the Early History of levees in the nation
- C. The need for data showing where levees exist and the population that is at risk behind levees
- D. The Consequences to the nation from a lack of a comprehensive approach to levee safety
- E. General suggestions on HR 4650 language

Appendix---Specific suggestions on the language of HR 4650

A. BASIC PRINCIPLES FOR REDUCING FUTURE FLOOD DAMAGES CAUSED WHEN LEVEES FAIL

1. Congress should decide if this bill should focus first on an inventory of levees with a cursory assessment of risk for each and collect enough data to determine the magnitude of the problem. Subsequent legislation could then design a levee safety program based on the data. (see page 6)
2. The federal government (Corps of Engineers as lead) should develop the initial levee inventory in cooperation with states, who must collaborate with local and regional entities in their state.
3. Any long term levee program must use the states as a focal point, who must in turn involve regional and local related programs. States are the only entity that has inherent authority to regulate the design, construction, operation and maintenance of levees. The federal government can encourage those things and offer incentives, but cannot mandate them.
4. Incentives must be built into the program to encourage states to undertake levee safety programs. Monies that states spend on effective levee safety programs will result in reduced federal tax spending for disaster relief. Thus, incentives could consider that appropriate state expenses could be banked against the non federal share of future disaster costs in that state.
5. The levee database must be geo-spatial and organized in a way that various data can be pulled from it for an ongoing inventory and assessment of risk. It must also be compatible with and linked to other related geo-spatial databases like FEMA's map mod program and USGS data.
6. The levee inventory and any follow up assessment and levee safety program must be clearly coordinated with related mitigation programs of the Corps of Engineers and other federal agencies such as FEMA (HMGP, PDM and FMA), NRCS, Bureau of Reclamation, etc.
7. Safety standards for levee construction must be developed; **levee safety standards are related to but not the same as standards for flood insurance (FEMA) and economics (USACE's NED)**. Safety of people and critical infrastructure are a separate issue from those. Guidance must be developed that establishes criteria and definitions for high, moderate and low risk levees in order to set priorities for the assessment and future mitigation actions (see page 5).
8. The federal government should not be performing detailed engineering analysis or designing engineering remedies for non-federal levees. That is the function of levee owners and sponsors. There is adequate expertise and capability in the private sector for non-federal levees.
9. Federal and State policy groups and Boards must be charged with recommending appropriate levee standards for various levees in the nation. The standard must be improved from the current 1% (100 year) standard currently used in most of the nation that is not providing an adequate standard of safety to protect highly urbanized areas and critical infrastructure.
10. ASFPM finds that future flood losses can be reduced if levees are never built to protect land that is undeveloped. Levees may be a viable option of last resort for mitigating damages to existing urbanized areas if properly designed, constructed, operated and maintained, but only if proper warning and evacuation procedures can assure protection of lives for those living at risk behind those levees.

B. A REFLECTION ON THE EARLY HISTORY OF LEVEES IN THE NATION

Levees have existed in this nation since early times. Those early levees were simply mounds of dirt thrown up by farmers or property owners to prevent frequent flooding of their property or crops. In California and elsewhere they may have been the mounds created by mining of river beds. Most of the population lived near rivers or the coast, since waterways were our highways and the rivers were our source of water for human and livestock consumption. The federal government got into the levee business in an organized way when Congress asked the Corps to become involved in the levees in Sacramento in 1917. The Flood Control Act of 1936 provided authority for the Corps of Engineers to be the lead agency on Flood Control projects in the nation. That authority has been used extensively for structural projects such as levees, dams and channelization, which modify our natural waterway systems to accommodate human needs. While the Corps has authority to also perform non-structural projects such as elevation and relocation of at risk buildings, the vast majority of projects have been structural (driven by an NED only policy). The evolution of responsibility for flooding and its consequences with a focus on federal structural projects has led states and communities to view flooding as a federal problem, not a state and local problem. It is important all federal legislation on levees establish a shared responsibility for damages when a levee fails, and for implementing a levee safety and mitigation approach.

Thousands of miles of levees have been constructed by the Corps, most with a non-federal sponsor that provides cost sharing for construction and accepts responsibility for operation and maintenance. The location of those levees is known to the Corps, although many of them may not be in a geo-spatial database. Many other levees have been constructed by communities or private individuals or levee groups. We know where some of these are, especially those who apply for and participate in the Corps PL 84-99 program, which allows federal tax money to be used to reconstruct the levees after failure or damage from a storm event. Many private levees were built to protect farmland from frequent flooding in order to make it economic to crop the land. Over time, development of homes or other buildings has taken place in the area which would be inundated when those levees overtop or fail. Many of the property owners behind those levees may not even be aware they are “protected” by a levee, and the condition of the levee may be known to no one.

Levees have been built to various heights to contain storms of various frequency. In the early years levees may have been built to withstand the Probable Maximum Flood, the 500 or 200 year flood, etc. In the past few decades most levees have been “dumbed down” to only withstand the 1% chance flood (100 year flood). That is an unintended consequence of combining the Corps NED policies with FEMA’s policies that areas protected by the 100 year flood are not required to carry flood insurance nor are they required to be elevated or otherwise protected from flooding.

ASFPM recommends Levee safety standards for protection of urbanized areas and critical facilities like hospitals, emergency operation and shelters must be protected to at least the 0.2% (500 year) flood event and in coastal areas a category 5 storm surge.

ASFPM recommends all structures in areas subject to inundation when a levee fails be required to carry flood insurance.

C. THE NEED FOR DATA SHOWING WHERE LEVEES EXIST OR THE POPULATION AT RISK BEHIND LEVEES

Levees can be grouped in 4 groups:

1. Federally built and operated
2. Federally built and locally maintained
3. Locally built and locally maintained
4. Privately built and hopefully maintained

While information on the location of Corp of Engineers constructed levees (group 1) can be gathered readily, it is not in a geo-spatial database that can provide cumulative data such as miles of levee, condition of the levees, population at risk, etc. That data for the other classes of levees is more problematic, with data on even the location of private levees being almost non-existent.

Additional data on the adequacy of the levee for (1) hydraulic capability or flood control capacity (height to contain a certain level of storm) (2) structural stability (is it geo-technically sound and structurally stable during that storm event) is similar to the above. (3) Data on the population at risk when the levee overtops or floods or (4) the cost of the structures and infrastructure likely to be damaged is also not known to any reasonable extent. The concern is that without this data, the Congress, the agencies, the states and communities or the public has any idea of the magnitude of the problem.

ASFPM surveyed the states to determine if states had an inventory of levees in their state. Only 2 states have a geospatial data base of their levees, and less than a dozen have even a listing of levees within their states. Other data indicates less than half of the states currently have the authority to regulate levee design, construction or maintenance of levees.

ASFPM suggests there is a need to establish a 3 tiered levee classification system:

- **High Risk Levees:** Those levees where failure can result in loss of life and significant property damage or where critical facilities like hospitals, water treatment, etc are at risk when a levee fails.
- **Medium Risk Levees:** Levees where failure will result in damage to a limited number of non-residential structures and failure will not pose a threat to loss of life
- **Low risk levees:** Those levees where failure would result in flooding of property, but no structures and will not cause a threat to loss of life. This may be agricultural land only

This system could be used to determine which levees would be inspected initially (high and medium only) and the National Levee Safety Review Board and advisory committee should set design and construction standards over the next 12 months.

D. CONSEQUENCES TO THE NATION FROM THE LACK OF A COMPREHENSIVE APPROACH TO LEVEE SAFETY

We do not know the amount of population or structures at risk behind levees that would suffer damages or loss of life when those levees overtop or fail. We have no data on the population behind most of the levees in the nation, let alone how many of those people would be able to evacuate in the event that levee or floodwall overtops or fails---whether during a storm event or on a “sunny day” failure. Damage data on the cost of the structures or the infrastructure in those levee or floodwall inundation areas is needed in order to asses the exposure of the taxpayer funded Disaster programs for both property damage and infrastructure.

What is the risk associated with each levee? Risk is determined by multiplying the vulnerability of failure of the levee or floodwall times the consequences when that levee fails. Which of our levees is high risk, moderate risk or low risk? We need all these answers in order to proceed wisely. How do we convey the risk to those living at risk behind those levees. Almost universally, people at risk of flooding when a levee fails do not understand or know they are at risk. “Risk perception” is that they are “safe” once the levee is there. This poor risk perception happens when governments tell them the levee is “safe” without qualifying they really mean its only safe from certain events and is compounded when government tells them they do not need to buy flood insurance nor do they need to elevate or otherwise protect their homes or businesses.

Based on the data that a well designed levee inventory would produce Congress can ask the agencies to design levee safety programs that would prioritize the nation's efforts to protect people and property. Without it, the size of the problem and costs of future events like Katrina-Rita are not known. To start fixing the problem before we know the magnitude or cost of the problem would not be an efficient use of taxpayer dollars.

E. GENERAL SUGGESTIONS ON HR 4650

Our suggestions fall into the following general areas. Specific suggested language changes are listed in the attached appendix.

General comments:

- It seems the bill should focus on the following elements:
 - Have the Corps produce an inventory of all levees in the nation
 - Or initially at least the subset of levees posing risk to humans
 - Provide an assessment of the "general" condition of those levees
 - Provide the base data that can lead to a national "Levee Safety Program between States and Levee owners
- Levee Safety Program - ASFPM believes that a properly designed State levee safety program is appropriate. However, the program presented is patterned after State Dam safety initiatives and carries forward some of its inherent weaknesses into the proposed Levee Safety program. First, the proposed structure will create one more federal "stove pipe" in State Government. An inherent weakness in the Dam Safety legislation is that it becomes in essence a permit function, with little apparent federal interest as can be demonstrated by the Federal Dam Safety Program never finding a home at the Federal level. We are aware of one state that has proven that the separation between levee management and floodplain management has led to poor management in and around the levees. Within the past year, as the people in charge of levee safety made steps to integrate floodplain management and levee management, those decision makers were removed in favor of those that would opt to put hazardous development in and around marginal levees, perhaps in the hope the federal taxpayers would pay the costs of catastrophic levee failure. We believe that a State Levee Safety Program is integral to the State's Floodplain Management Program and merging them into a single program will buffer short term State and Local political agendas while best serving the Federal interest.
- Funding - \$10 million a year will be inadequate for implementing a full levee safety program which must build capability in and provide incentives for states to develop levee safety programs.
- Engineering Studies - **This is a major problem.** The Federal government should not be in the business of performing engineering inspections and designing engineering remedies. There is ample expertise and capacity in the private sector to do this. Levee owners should be told they must hire an engineer to inspect the levee and design needed improvements. The Corps should be collecting data and doing a cursory inspection of levees to report on heights, general condition of levee and maintenance and to inform owners and the state of their findings. And this should only be done on those levees in the high and medium risk categories.

We do not believe the Corps has the authority to order owners to repair levees.

But States can do so---if they pass a law (or have one) to that effect.

CONCLUSION

The ASFPM has a mission to reduce the costs of flood damages in the nation, which prior to the 2004 and 2005 hurricane seasons exceeded \$6 billion/year. Today, we once again stand at a crossroads – in the aftermath of a catastrophic flood disaster with an opportunity to refine our nation’s policy for managing flood hazards. Thank you for the opportunity to provide our thoughts on these important issues. The ASFPM and its members look forward to working with you as we move towards a common goal of reducing flood losses.

For more information, please contact: Larry Larson, ASFPM Executive Director, (608) 274-0123, (larry@floods.org) or Pamela Pogue, ASFPM Chair, (401) 946-9996 (pam.pogue@ri.ngb.army.mil)

Appendix to ASFPM comments on HR 4650

SPECIFIC SUGGESTIONS ON THE LANGUAGE OF HR 4650

Section 3: Inspection of Levees

ASFPM suggests this section be renamed “Inventory of Levees”

Page 5, line 2--- add the word “location,” in front of construction

Page 5, line 7—Inspection requirements?

This section seems somehow to not fit in. How this is really "Determination"? It would seem there are two reasons to "classify" levees. One is to determine which ones to inspect first; the other is to possibly set different design and construction standards in the future.

We suggest there is a need to establish a 3 tiered classification system, to start with

- **High Risk Levees:** Those levees where failure can result in loss of life and significant property damage
- **Medium Risk Levees:** Levees where failure will result in damage to a limited number of non-residential structures and failure will not pose a threat to loss of life
- **Low risk levees:** Those levees where failure would result in flooding of property, but no structures and will not cause a threat to loss of life. This may be agricultural land only

This system could be used to determine which levees would be inspected (high and medium only) and the levee Board and advisory committee should set design and construction standards over the next 12 months.

Nothing wrong with the list of how a levee could fail, but is that appropriate for law? What if one form of failure is left out? Seems like this detail may be best for rules

Page 5, line 14---add “flooding” after storm surges

Page 6, line 3---add “flood or” in front of storm surge

Page 6, line 15—delete all of (2) through line 8 page 7 regarding engineering studies

This is a major problem. The Federal government should not be in the business of performing engineering inspections and designing engineering remedies. There is ample expertise and capacity in the private sector to do this. Levee owners should be told they must hire an engineer to inspect the levee and design needed improvements. The Corps should be collecting data and doing a cursory inspection of levees to report on heights, general condition of levee and maintenance and to inform owners and the state of their findings. And this should only be done on those levees in the high and medium risk categories.

We do not believe the Corps has the authority to order owners to repair levees.

But States can do so---if they pass a law (or have one) to that effect.

Page 7 line 9—delete all of (f) through line 4 page 8

Priority lists---general

The Corps already presents a list of projects every year. Some argue that it needs to have priorities nationwide. While this sounds like such a list, this seems to be a list only of levee projects. We oppose such a list, and oppose having this bill result in a list of levee projects nationwide. This bill should authorize a levee inventory and assessment only, not projects.

Section 4: National Levee Inventory

Page 8 line 5—delete this title and move the sentence to the above new section on inventory

Section 5: Interagency Committee on Levee Safety

Page 8, line 9—We recommend USGS and EPA be members of this committee. Both have critical roles to play in collecting data and setting national policy on levees

Section 6: National Levee Safety Review Board

Page 9 line 5—We agree with our colleagues in the National Association of Flood and Stormwater Management Agencies in recommending that local and regional government entities also be represented on this Board since many of the nation’s levees are operated and maintained by them.

Section 7: National Levee Safety Program

Consider delaying legislation to set up a national levee safety program until the inventory is completed in 3 years, whereupon added data is available to design such a program. If it is included in this legislation, ASFPM recommends the following:

Page 13, line 22—after economically, add “socially and environmentally”

Page 14, line 8—add after programs—“and to build public awareness of the risks associated with living in levee failure areas”

Page 14, line 8—add at end—“and build state capability for levee safety programs”

Page 17, line 11—Before “provide”, add “Require levee owners to”

We suggest (ii) and (i) be switched. The whole premise of this section should be that the owner must fix the problem. Where no owner can be found, or the owner is insolvent, the state should then step in and breach the levee so it will not be subject to failure. The state should never "repair" the levee unless it is a state owned levee.

Page 17, line 20—before “establish” add “Require levee owners to”

Page 18 top of page with i, ii and iii.

This is where the classification system could come into play. On iii, the word "necessary" should be changed to "critical" facility, where the definition would be consistent with Federal Executive Order 11988 on floodplain management.

Page 18, line 7—after flooding add “including the costs and consequences thereof”

Page 19, line 10---this is where incentives for states need to be developed or states will not adopt levee safety programs

Page 21, line25—add after rehabilitation “maintenance”

Page 16-21 State Levee Safety Program

The whole concept of states needing to be responsible for levee safety is exactly right. The federal government does not have authority to order owners to fix or maintain levees, but states can and do.

What will cause states to undertake a levee safety program? It makes sense to provide federal incentives to the states if they undertake an effective program.

The most effective incentives would be to provide states (and communities in that state in compliance) with an increased cost share for disaster assistance and flood mitigation projects from FEMA. Some might ask why incentives in a Corps run program would encourage activity in FEMA programs? We all agree the agencies must integrate their flood loss activities much better. The biggest cost savings to the federal government will be for disaster relief and post disaster mitigation. Those two costs can be reduced greatly if levees in the nation are in safe condition and maintained as such.

Without incentives, states will not adopt or effectively administer levee safety programs. We can see that an effective state levee safety program should result in an increase in the federal share of Public Assistance for disaster relief and for post-disaster mitigation of from 2 to 5%. It is currently 75/25 split most times. A list of state activities and requirements could be established which could be used to give a state more or less credit, depending on how many items on the list a state adequately performs.