



**U.S. House of Representatives**  
**Committee on Transportation and Infrastructure**

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May 18, 2009

**SUMMARY OF SUBJECT MATTER**

**TO:** Members of the Subcommittee on Water Resources and Environment  
**FROM:** Subcommittee on Water Resources and Environment Staff  
**SUBJECT:** Hearing on "Recommendations of the National Committee on Levee Safety"

**PURPOSE OF HEARING**

The Subcommittee on Water Resources and Environment will meet on Tuesday, May 19, 2009, at 2:00 p.m., in room 2167 of the Rayburn House Office Building to receive testimony from representatives from the U.S. Army Corps of Engineers (Corps), state and local governments, and interested stakeholders.

**BACKGROUND**

The Water Resources Development Act (WRDA) of 2007, Section 9003, created the National Committee on Levee Safety (Committee) to develop recommendations for a National Levee Safety Program and a strategic plan for implementation of the recommendations. This memorandum reviews the recommendations made by the National Committee on Levee Safety and provides information on the status of the nation's levees.

The report focuses on the protection of human life and property through the encouragement of best management practices and the development of recommendations for the creation of a national levee safety program. Additional goals include promoting public awareness of levee safety programs within states and the residual risk associated with living in leveed areas.

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**Status of the Nation's Levees**

In the United States there are more than 2,000 levees in the Corps Rehabilitation and Inspection program totaling over 14,000 miles in length. While some levees were built by the Corps

and other Federal agencies, other levees were built by non-federal entities with unknown materials and designs. The Corps has the shared responsibility with Federal, state, and local agencies to quantify and report to the public the inherent risk associated with these levees. The Corps has specific authorities within its levee safety program to routinely inspect these levees. The purpose of the program is to ensure that local sponsors perform required operation and maintenance to determine whether or not levees are eligible for the Corps Rehabilitation and Inspection Program. As part of the program, the Corps will undertake emergency one time efforts during a flood to protect a levee and will rebuild a levee that is in the program if it is damaged by a flood event.

The Corps levee safety program lists 114 levees that have received an unacceptable rating from routine maintenance inspections conducted since February 1, 2007. An unacceptable rating means that a levee has one or more deficient conditions that may prevent it from functioning as designed, intended, or required. If the non-federal sponsor does not make repairs necessary to bring the levee into compliance within one year, the sponsor is no longer active in the Corps' Rehabilitation and Inspection Program and, therefore, is not eligible for federal rehabilitation funds to repair damages to the levee following a flood event.

In addition to the 14,000 miles of federal levee systems in the United States, there are a large number of private and other non-Corps levees that are not inventoried and have not been inspected by the levee safety program. The Corps does not have information on the number of levees that have not yet been inventoried, where they are located, their condition, and more importantly what would be the consequences of their failure.

According to figures in the Committee's report, the extent of unknown and undocumented non-federal levees may exceed 100,000 additional miles.

The many challenges facing the nation's leveed areas led to the establishment of the National Levee Safety Committee by Congress. There are no national standards related to levees across all levels of government. As a result, state and local governments have varying policies regarding levee design and construction, as well as operation and maintenance.

Many levees are more than 50 years old. Some were not built by federal agencies and many levees were designed and constructed with now outdated engineering technology. Some levees were originally designed to protect agricultural areas where failure posed a lower level of risk. As populations have shifted, levees that once protected agricultural areas now protect large urban areas. These agricultural levees were not engineered to protect high risk areas. Risk levels in these areas are unusually high because failure of urban levees may result in significant loss of life, property damage, and economic loss.

Levees cannot eliminate the risk of flooding; they only reduce the risk to individuals and businesses located behind them. Levees are designed and built to a specific height and capacity in order to provide a specific level of flood protection. Because both man-made and natural changes occur over time, the level of protection provided by a levee may diminish. In addition, land use changes upstream may affect the hydrological conditions in an area by increasing runoff and reducing the level of protection provided by a levee.

While it is difficult to accurately predict the likelihood and flood stage of future events, factors are present that may make flood events more likely and potentially even more severe. An increase in development in floodplains, behind levees, and within watersheds increases runoff and exposes life and property to increased risk. Additionally, climate change may affect the frequency and severity of storm events.

### **Recommendations of the Committee**

The Committee consists of 16 members, each an expert in aspects of levee safety: a chairperson from the Corps, a representative from the Federal Emergency Management Agency (FEMA), eight state levee safety agency officials, two private sector representatives, two representatives of local or regional governments, and two Indian Tribe representatives.

The Committee recommendations fall into three specific categories that are integral to the creation of an effective National Levee Safety Program. The first category emphasizes the need for leadership to be provided by the establishment of a National Levee Safety Commission. The second category focuses on the creation of strong levee safety programs in all states that will oversee critical levee safety components. The third category requires the coordination and alignment of existing federal programs to increase their efficiency.

The Committee made 20 recommendations (*The full report can be found at [http://www.iwr.usace.army.mil/ncls/docs/NCLS-Recommendation-Report\\_012009\\_DRAFT.pdf](http://www.iwr.usace.army.mil/ncls/docs/NCLS-Recommendation-Report_012009_DRAFT.pdf)*).

The recommendations of the Committee are summarized as follows:

#### **Comprehensive and Consistent National Leadership**

- **Establish a National Levee Safety Commission** to provide national leadership and comprehensive and consistent approaches to levee safety including standards, research and development, technical materials and assistance, training, public involvement and education, facilitation of the alignment of federal programs and design, and delegation and oversight of a delegated program to States.
- **Expand and maintain the National Levee Database** to include a one-time Corps inventory and inspection of all non-federal levees. Baseline information will be included and maintained in an expanded National Levee Database (NLD) in order that critical safety issues, true costs of good levee stewardship, and the state of individual levees can inform priorities and provide data for needed risk-informed assessments and decision-making.
- **Adopt a Hazard Potential Classification System** as a first step in identifying and prioritizing hazard in leveed areas. Due to a lack of data regarding probability of failure, initial classifications should be based solely on consequences in order to assist in setting priorities, criteria, and requirements as the National Levee Safety Program is being established.

- **Develop and adopt National Levee Safety Standards** that will assist in ensuring that the best engineering practices are available and implemented throughout the nation at all levels of government.
- **Develop tolerable risk guidelines** in order to facilitate an understanding of the options to reduce identified risks, how uncertainty affects this understanding, and to better inform levee construction/enhancement decisions, and weigh nonstructural alternatives to flood risk management in a risk-informed context.
- **Change “Levee Certification” to “Compliance Determination”** to better articulate the intent that “certification” under the National Flood Insurance Program (NFIP) requirements does not constitute a safety guarantee or warranty. The purpose of this change is to more clearly communicate residual risks of living and working in leveed areas.
- **Subject Levee Certifications (Compliance Determinations) under FEMA’s National Flood Insurance Program to peer review** to increase confidence in technical determinations of compliance.
- **Swiftly address growing concerns regarding liability for damages resulting from levee failures** through exploration of a range of measures aimed at reducing the potential liability of engineering firms and/or government agencies that perform engineering services for levee systems (e.g., inspections, evaluations, design, construction administration, certification, or flood fighting). Congress should address this liability concern as a first priority to help ensure state and local interest in developing levee safety programs, and to prevent much needed levee repairs, rehabilitation, and certification from coming to a halt.
- **Develop a comprehensive National Public Involvement and Education/Awareness Campaign to communicate risk and change behavior in leveed areas** as an essential element of levee safety by improving public understanding of the role of levees, associated risks, and individual responsibilities to empower people to make risk-informed choices.
- **Provide comprehensive technical materials and direct technical assistance** crucial to the successful implementation of consistent national standards to States, local communities and owner/operators.
- **Develop a National Levee Safety Training Program** including a combination of courses, materials, curricula, conferences, and direct assistance resulting in an increase in the level of expertise and knowledge in all aspects of levee safety. This program would include the development of curricula and certification requirements for a Certified Levee Professional program.
- **Develop and implement measures to more closely harmonize levee safety activities with environmental protection requirements** to ensure that critical levee operations and maintenance is not delayed and that, where possible without compromising human safety, environmentally-friendly practices and techniques are developed and used.

- **Conduct a research and development program** that will continually advance state-of-the-art technologies and practices for levee safety and conduct critical operations and maintenance activities in as cost-effective and environmentally-friendly manner as possible.

### **Building and Sustaining Levee Safety Programs in All States**

- **Design and delegate program responsibilities to States** to assist States and local governments develop effective levee safety programs focused on continual and periodic inspections, emergency evacuation, mitigation, public involvement and risk communication/awareness.
- **Establish a Levee Safety Grant Program** to assist States and local communities develop and maintain the institutional capacity, necessary expertise, and program framework to quickly initiate and maintain levee safety program activities and requirements.
- **Establish the National Levee Rehabilitation, Improvement, and Flood Mitigation Fund** to aid in the rehabilitation, improvement, or removal of aging or deficient national levee infrastructure. Investment (cost-shared) is recommended to be applied to the combination of activities, both structural and non-structural, that combined, would maximize overall risk reduction and initially be focused in areas with the greatest risk to human safety.

### **Aligning Existing Federal Programs**

- **Explore potential incentives and disincentives** for good levee management through alignment of existing federal programs.
- **Mandate purchase of risk-based flood insurance in leveed areas** to reduce financial flood damages and increase understanding of communities and individuals that levees do not eliminate risk from flooding.
- **Augment FEMA's Mapping Program** to improve risk identification and communication in leveed areas and consolidate critical information about flood risk.
- **Align FEMA's Community Rating System (CRS) to reward development of state levee safety programs** by providing further incentives to communities to exceed minimum program requirements and benefit from lower risk-based flood insurance rates to individuals who live in leveed areas.

### **Prior Legislative and Oversight Activity**

In the 110<sup>th</sup> Congress, the Subcommittee on Water Resources and Environment held a hearing on May 8, 2007, on the state of our nation's levee safety programs.

Title IX of the Water Resources Development Act of 2007 (P.L. 110-114) authorized the Committee to "develop recommendations for a national levee safety programs, including a strategic

plan for implementation of that program.” The report completed by the Committee and its recommendations are the focus of this hearing.

**AGENDA**

**Mr. Eric Halpin**  
Special Assistant for  
Dam and Levee Safety  
U.S. Army Corps of Engineers  
Washington, D.C.

**Mr. Larry Larson**  
Executive Director  
Association of State Floodplain Managers  
Madison, Wisconsin

**Mr. Steve Fitzgerald**  
Chief Engineer  
Harris County Flood Control District  
Houston, Texas

*Testifying on behalf of the National Association of Flood and Stormwater Management Agencies*

**Mr. David Conrad**  
Senior Water Resources Specialist  
National Wildlife Federation  
Washington, D.C.

**Dr. Leslie F. Harder, Jr. P.E., G.E., PhD**  
Senior Water Resources Technical Advisor  
HDR, Inc  
Folsom, California

*Testifying on behalf of the American Council of Engineering Companies*

**Mr. Andy Haney**  
Public Works Director  
City of Ottawa, Kansas  
*Testifying on behalf of the American Public Works Association*