National Flood Risk Management –
Levee Safety Component
Prepared by the Association of State Floodplain Managers

Summary
As the nation grapples with challenges associated with levees and associated flood risk, Congress must consider the full range of measures to reduce risk, including flood insurance, changes in land use, and the strategic relocation from areas of greatest risk. States and local governments must change long-held beliefs about their role and responsibility in addressing flood risk, and the long-term costs of local development decisions. ASFPM recommends that levee safety be addressed as one part of a broader national flood risk management strategy, and that incentives be designed to encourage state and local practices proven to effectively manage and reduce flood losses and associated environmental, social, and economic disruption.

Background
Flood risk management entails the evaluation of the broad range of actions to assess and reduce the risk of flooding, and to alter event probability, consequences, or both. 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.

Broad Range of Solutions to the Growing Problem of Levees
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.

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.
Incentivizing State & Local Practices

Too many federal—and corresponding state and local—public policies and activities for water-related resources and hazards operate at cross purposes and even foster activities that undermine safety and environmental quality. Under current federal policies and programs, states and local governments have little incentive to steer development from flood-prone lands. On the contrary, they are able to effectively externalize the consequences of poor local land use policies to the federal taxpayer through a burgeoning disaster relief program. Programs should be reformed to eliminate the incentives they unwittingly provide for making unwise decisions and taking inappropriate action with regard to our water resources. In their place, we must create positive incentives for appropriate action anywhere in the watershed, but especially in areas that are flood-prone or otherwise ecologically sensitive.

To assure the success of a national flood risk management initiative, the federal government will need the participation and commitment of states, local governments, and the private sector. Communities and states will need to commit to robust and inclusive planning processes, reaching beyond their jurisdictional boundaries and traditional partners, many for the first time. They will also need to review and integrate existing plans for land use, hazard mitigation, infrastructure, and other responsibilities. Finally, important data will need to be acquired or generated, maintained, and used to populate the National Levee Database, including levee location, level of protection, general information on the condition of the levee, and the number of structures in residual risk areas for all levees regardless of provenance, ownership, and responsibility for operations and maintenance.

Inclusion of a diverse menu of incentives can help motivate state and local governments in their efforts to plan and manage flood risk associated with levees. Incentives can cost the federal taxpayers less than continuing to pay disaster relief for flood damages if the incentives encourage states and locals to manage development wisely to avoid creating tomorrow’s disaster. Additionally, technical assistance programs such as the U.S. Army Corps of Engineers (USACE) programs for Planning Assistance to States (PL 93-251) and Floodplain Management Services (PL 86-645) support innovative management of flood risk along with other water resources challenges. Existing federal law in environmental and other policy areas provide useful examples of incentives beyond simple monetary inducements to reward states for robust programs. In addition to the data and planning contributions outlined above, incentives should be designed to encourage and reward States that meet and exceed minimum standards on a sliding scale; the more rigorous or innovative the program, the greater the rewards.

Policy distinctions between how the nation addresses existing levees and emerging flood risk. Under an outdated policy based on attempts to control flooding by engineering our rivers, government at all levels invested tremendous public resources in and behind levees throughout the nation. However, a new national flood risk management policy must establish a new approach to addressing risks with existing levees, while evaluating new and emerging flood risk to developed areas. This new policy must prohibit federal participation in the construction of new levees to protect undeveloped areas of flood risk. Flood risk needs to be investigated and addressed on a watershed or basinwide level with the participation of all potentially affected property owners and jurisdictions up- and down-stream. However, protection of existing investment at risk requires consideration of the full range of possible solutions including structural measures such as levee system improvement or reconfiguration, and nonstructural measures such as strategic relocation from areas at risk.
Recommendations of Past Reports

Reports from the 1970s onward from the Federal Emergency Management Agency (FEMA), US Army Corps of Engineers (USACE), and leading academics have recommended the following:

- Requiring flood insurance behind levees; and
- Greater than 100-year, e.g. Standard Project Flood (SPF), level of protection for urbanized areas or where critical facilities exist behind those levees;
- Inclusion of the full range of nonstructural solutions to flood problems, and combining structural with nonstructural measures where levees are warranted as part of the solution.

Most recently, the National Committee on Levee Safety (NCLS) developed a legislative proposal based on its report and recommendations to Congress from January 2009. ASFPM participated on the NCLS in the development of the legislative proposal and views the following recommendations as critical to reducing the loss of life and property in future levee failures.

- Expansion and completion of the National Levee Inventory to include all levees;
- National mapping and mandatory flood insurance in residual risk areas associated with levees;
- Development of national levee safety standards and a levee hazard classification system;
- Inclusion of structures along canals and other structures such as highway and railway embankments that are relied upon as levees in the definition of what is a levee; and
- Public engagement regarding residual risk areas associated with levees.

ASFPM Recommendations

Although ASFPM supports much of the NCLS proposal, we identified important gaps that will need to be addressed for a levee program to be sustainable and effective. Since NCLS has completed its report and recommendations to Congress, NCLS could be tasked with further exploration of the following issues.

1. Development of a National Flood Risk Management Program, to address levee safety among the broader range of risk management challenges and opportunities. We cannot address levees as an entity onto themselves without consideration of land use decisions and the full range of flood risk management tools. Additionally, effective state and local programs need to operate within a unified National Flood Risk Management Program that guides decision-making at all levels. If a program only addresses the levee structure and not the responsibility of local communities to control and guide the development behind the levee, the ability to reduce the risk is lost. Finally, a National Flood Risk Management Program should identify the federal interest in preventing and reducing catastrophic flood losses considering the full range of risk management options – not just levees:

   a. A national policy should be adopted to prevent federal participation in the construction of new levees except to protect existing development where a full range of options, including all nonstructural options, have been considered and included in a multifaceted approach. This new national policy should be embodied in future Water Resources Development Acts, Principles & Standards, and other statements of broad national policy.

   b. 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 to understand the scope of the nation’s exposure, and to ensure that public dollars are spent wisely.
c. Any national levee program address levees and embankments in the floodplain that modify flooding, and include them in the oversight and regulation applicable to the traditional definition of what is a levee.

d. A National Levee Hazard Classification System should be adopted that serves as the basis for risk identification, prioritization, management, and other requirements for eligibility for federal funds. Since levees can fail with catastrophic consequences, even if for only a few people, ASFPM recommends the following system:

   HIGH  Potential for any loss of life
   SIGNIFICANT  Potential for damage to property
   LOW  No potential for loss of life or damage to property

e. Federal funds to support construction of new levees in urbanized areas must provide protection for no less than the 0.2%-chance flood.

f. Eligibility for funds for levee work on pre-existing structures, including under the Flood Control and Coastal Emergency Act (P.L. 84-99, 33 U.S.C. 701n), must include requirement that levee structure provide no less than 100-year level of protection.

g. Within 5 years of enactment, federal funds for new housing, transportation, and infrastructure in non-urbanized residual risk areas associated with levees is available only in areas with at least 1%-chance protection; urbanized areas and critical facilities will require at least 0.2%-chance protection to be eligible for Federal funds in such residual risk areas.

h. All new levees, and considerations for rehabilitation of existing levees, should be set back for the waterway to allow natural systems to provide natural flood reduction benefits, relieve the erosion and hydraulic pressure on the levee, and allow the waterway’s natural ecosystems and resources to function.

2. Residual risk areas behind levees must be mapped and all properties therein insured for flood at full risk premiums. Property owners in residual risk areas must be required to obtain risk-based flood insurance coverage to help manage economic loss of what for many of them is their only capital asset, assure equitable distribution of responsibility, incentivize levee maintenance & risk mitigation, and to help manage potential legal liabilities associated with levees for levee owners, program managers, and providers of engineering services.

a. Affordability of flood insurance must not be an impediment for those who need coverage but cannot afford it. Property owners at risk who cannot afford insurance are those who most need it, as well as advice and support to help them undertake mitigation of their structure. Every resident has the right to be fully informed of their flood risk. Furthermore, family safety should not be a luxury available only to those who can afford it. For these reasons, Congress should investigate development of a means-based voucher, premium rebate, or similar system to provide interim relief for those who cannot afford to pay flood insurance premiums.

b. A new, but temporary federal program to address flood insurance affordability should be managed through an agency that deals will income supplemental programs, such as the Department of Housing and Urban Development. The National Flood Insurance Program is not
an appropriate vehicle for means-based programs. Moreover, measures such as premium subsidies, delaying insurance requirements, and other measures intended to reduce financial burdens serve only to distort risk perception and undermine the fiscal soundness and other aspects of the flood insurance program that promote individual responsibility.

c. In addition to measures to address affordability, the following innovations in insurance warrant exploration as stand-alone approaches and in combination, such as long-term group insurance behind levees that is attached to the property:

1) Group flood insurance obtained by the levee district provided to property owners throughout the residual risk area through premiums combined with existing district fees. This measure is attracting attention as a benefit for everyone involved, since levee owners’ liability is reduced, property owners’ financial risk is managed, and everyone shares a common stake in the ongoing maintenance of that levee and other risk reduction measures that keep premiums down.

2) Group flood insurance obtained by the community provided to property owners throughout the residual risk area through premiums that can provide coverage for all properties, not just those with federally backed mortgages, thus the community can recover when the levee is overtopped or fails. The community is also the entity that has control over future development and redevelopment, and can use its development plan and mitigation plan to manage risk and reduce flood insurance premiums.

3) Long-term flood insurance based on the length of any federally-backed loan, to reduce the rate of policy nonrenewal and provide continued financial security to citizens.

4) Flood insurance attached to the property rather than to the insured, to ensure continuity of coverage even if property is transferred;

5) Legislation requiring that all property insurance policies in the nation cover all natural hazards; and

6) Privatization of flood insurance.

3. Minimum performance standards for communities to qualify for federal funding to construct new levees, rehabilitate or repair existing levees, and develop infrastructure in residual risk areas.

Although land use planning is a local and state function, the federal government plays an important role in helping communities guide development through conditions on the availability of federal dollars and through policy and regulatory guidance. In addition to minimum standards proposed by the NCLS, to qualify for federal funding to construct new levees, rehabilitate, or repair existing levees, and develop infrastructure in residual risk areas, communities must be required to:

a. Participate in the National Flood Insurance Program;

b. Adopt a FEMA approved Hazard Mitigation Action Plan that includes emergency action and planning (EAP) for residual risk areas associated with all levees and residual risk areas in their jurisdiction, including post-flood recovery and resiliency;

c. Prevent the construction of critical facilities (CFs) in areas subject to inundation in the 0.2%-chance floodplain, and that requires that all CFs be protected, accessible, and operable in the 0.2%-chance flood;
d. Evaluate the full array of nonstructural measures to reduce risk, implement effective nonstructural measures in combination with any structural measures that are selected, and adopt standards to prevent any post-project increase of risk, prior to any commitment of public funds toward levee work;

e. Demonstrate binding and guaranteed financial capacity and commitment to long-term operations and maintenance, rehabilitation, and management of all levee structures and system components in the community’s jurisdiction;

f. Adopt short- and long-range flood risk reduction planning as part of the community’s mitigation, development and land use planning, including comprehensive planning and zoning that:
   1) Reflects and addresses flood hazards, levees, and other relevant flood damage reduction structures, and articulates the community’s objectives in managing flood risk;
   2) Incorporates and references data, including maps, that shows current conditions, trends, and likely future conditions, and addresses each hazard that may confront or impact the community in any material way;
   3) Identifies areas of highest risk in which new development and redevelopment are not permitted due to the hazard, and that if damaged in a future flood or other calamity, are appropriate for buyout of properties and floodplain restoration;
   4) Identifies existing properties that pre-date current zoning regulations or development codes, and that are appropriate for buyout when the property is next available for transfer;
   5) Identifies vulnerable structures, lifelines (such as water, sewer, power, critical roadways), and critical facilities (such as emergency operations centers, fire stations, hospitals, evacuation centers, and hazardous materials storage areas); and
   6) Articulates property owner rights and responsibilities in flood risk and residual risk areas.

g. Participate in regional/watershed planning to identify and manage risk that crosses jurisdictional boundaries;

h. Notify levee owners and provide opportunity to comment on all proposed development in that owner’s residual risk area; and

i. Communicate annually with property owners in residual risk areas to notify them of their risk, update them on emergency action plans, report on levee operations and maintenance over the past year, and for other public notification and engagement activities.

4. To have a recognized State Levee Safety Program and qualify for federal funding to support flood risk management and levee safety grant funds, including PL 84-99 and recovery and mitigation assistance, States must demonstrate their leadership and commitment to identify, manage, and reduce flood risk. In addition to the standards proposed by the NCLS, States must meet the following performance standards to have a recognized State Levee Safety Program:

   a. The community performance standards listed above are designed to incentivize effective community actions. The following state requirements will help ensure that risk associated with levees is managed throughout a qualifying state, and regardless of whether federal levee funds are sought for any particular project:
1) Require the evaluation of the full array of nonstructural measures to reduce risk prior to any commitment of public funds toward levee work, adoption of effective nonstructural measures, and adoption of standards to prevent any post-project increase of risk, prior to any commitment of public funds toward levee work;

2) Adoption of evaluation process that prevents to the maximum extent practicable the construction of new critical facilities (CFs) in areas subject to inundation in the 0.2%-chance floodplain, and that requires that all CFs be protected, accessible, and operable in the 0.2%-chance flood;

3) Require statewide seller disclosure and buyer notification of residual flood risk associated with levees;

4) Require statewide levee owner notification and comment regarding all proposed development in their residual risk area.

b. Statewide prohibition on the construction of new levees to protect undeveloped areas of flood risk;

c. State agencies and state-funded activities, including those associated with transportation, water, and other development infrastructure, must obtain permits and otherwise comply with all local, county, regional, and other applicable development permits;

d. Adopt and maintain a FEMA-recognized State Hazard Mitigation Action Plan that includes residual risk associated with levees, EAPs, and protection of existing critical facilities and infrastructure in the 0.2%-chance floodplain;

e. Participate in the National Levee Inventory, provide and maintain data for the National Levee Database (NLD), and promote public awareness of and access to web-based levee risk data; and

f. Require levee owners to conduct detailed analyses of levees, provide these data to state and local government officials, send to the federal government for inclusion in the NLD, and publish as part of state web-based levee risk data portal.