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COMPLETE STATEMENT OF
ASSOCIATION OF STATE FLOODPLAIN MANAGERS, INC.
BEFORE THE
Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment
UNITED STATES HOUSE OF REPRESENTATIVES

National Policy Priorities and the
Recommendations of the National Committee on Levee Safety

Presented by

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INTRODUCTION

In the years following the 2005 hurricane season, which dramatically demonstrated the devastating consequences that can result from over reliance on levees, numerous policy summits gathered experts to craft recommendations for the future of the nation's levees and levee systems, the US Army Corps of Engineers completed its initial review of federal levees, and Congress enacted the National Levee Safety Act of 2007. The Act created a National Committee on Levee Safety which was asked to prepare a report back to Congress on what a levee safety program should entail. The Committee completed its Report with recommendations, currently under consideration by the Administration and Congress. The 2008 Midwest Floods, 2009 sandbagging of levees on the Red River, and other flood disasters involving levees reminded us all that, as we consider the problem and move toward solutions, the nation's levee infrastructure continues to deteriorate. At the same time, levees are being relied on to provide total safety, even for events larger than those they were designed for, thus these factors combine to threaten the safety, economic vitality, and long-term sustainability of our communities. The nation remains in need of robust policies, programs and institutions, of which levees can be a part, to prevent flood losses, make efficient use of tax dollars, and assure a more sustainable future. Nothing less than our nation's security, stability and prosperity are at stake. We appreciate your leadership in meeting this challenge, and welcome this opportunity to share our views with you.

The Association of State Floodplain Managers and its 27 Chapters represent more than 14,000 state and local officials and other professionals who are engaged in all aspects of managing and mitigating flood risk to address the loss of life and property from natural hazards. These aspects include land management, mapping, engineering, planning, building codes and permits, community development, hydrology, forecasting, emergency response, water resources and insurance. Most of our members work with the nation's 21,000 flood-prone communities struggling to reduce their losses from all flood related hazards. All ASFPM members are concerned with working to reduce our nation's flood-related losses. Our state and local officials are the federal government's partners in implementing federal programs and working to achieve effectiveness in meeting our shared objectives.

The 2005 overtopping and failure of levees in New Orleans have been called the "wake-up call" to the nation on the consequences of over reliance on levees and ignoring levee safety. 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. We look forward to working with you and others to identify the nation's levees and their condition to understand and manage the flood risk associated with levees, and to address the overall flood risk management context in which those structures operate. Today, our testimony addresses the following:

- A. History Leading Up to the Current State of Levee Insecurity**
- B. The Need for a National Flood Risk Management Policy and Framework**
- C. ASFPM Response to the Report of the National Committee on Levee Safety**
- D. Additional Recommendations to Incentivize Sustainable Flood Risk Management and Levee Safety**
- E. Recommended Next Steps to Address the Problem in Advance of the Next Big Flood**

A. HISTORY LEADING UP TO THE CURRENT STATE OF LEVEE PROBLEMS

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: others were earthen mounds from mining operations. Most of the population lived near rivers or the coast, since waterways were our highways and the rivers were our source of water for industrial, human and livestock consumption, and crop irrigation. 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. By 1926, the Corps had hemmed in the Lower Mississippi River along its thousand mile course through six states, relying solely on levees to control floods, and reporting that the system of levees “is now in condition to prevent the destructive effects of floods.”¹ The very next year, this levees-only approach led to widespread destruction when the extent and consequences of levee overtopping, failure, and flooding exceeded even that of New Orleans as a result of Hurricane Katrina.

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. 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, and fostered the evolution of responsibility for management of floods. That authority has been used extensively for structural projects such as levees, dams, and channelization, which modify our natural waterway systems to accommodate development needs. While the Corps has authority to perform non-structural projects such as elevation or relocation of at-risk buildings, the vast majority of projects have been structural. The evolution of responsibility for flooding and its consequences that has focused on federal structural projects has led states and communities to view flooding incorrectly as a federal problem, not a local and state problem.

2. We don't know how many miles of levees there are or their condition. As a nation, we are largely uncertain about the condition or likely performance of our levees. The Corps has constructed nearly 9,000 miles of levees, most with a non-federal sponsor that cost-shares in the construction and agrees to be responsible for operation and maintenance of the levee. Many private levees have been built to protect farmland from frequent flooding. Over time, however, communities and infrastructure have been built or greatly expanded in areas that will be inundated when those levees are overtopped or fail. Little is known about the current condition of Federal or non-federal levees, including whether these levees were designed to meet today's conditions, or whether they have been properly maintained by the non-federal interests. Property owners behind those levees may not even be aware the levee “protecting” them is deteriorating and subject to failure or is inadequate to handle today's flood events. Too often, we learn about the existence and condition of these levees when one fails or is overwhelmed by a flood event.

For these reasons, ASFPM strongly supports efforts by the Corps to complete the nationwide inventory of federal levees and to include in this inventory the thousands of miles of other levees built by other Federal agencies, states, towns, farmers, landowners, and other private interests. While some of these levees were well-built and maintained, many others were not, or were not

¹ United States Army Corps of Engineers, *Annual Report of the Chief of Engineers for 1926: Mississippi River Commission* (Washington: GPO, 1926), p. 1793.

built to handle larger floods. To fully understand and manage the scope of the nation's exposure, Federal and nonfederal levees need to be inventoried, including their current actual level of protection, condition, and scope of development they are relied upon to protect. A comprehensive inventory of the locations and protective qualities of the nation's levees will enable Congress, states, and local governments to grasp the full scope of the nation's exposure. Only then can comprehensive, effective levee safety programs be designed and actions prioritized to invest resources where they will address the areas of greatest risk or of greatest benefit to the community, state or the nation's taxpayers.

3. Levees and the NFIP. Levees have been built to various heights to contain storms of various frequencies. Before the 1970s, the Corps of Engineers focused on building levees to protect properties from the Standard Project Flood (SPF), the 500, or 200-year flood. However, it was not until widespread implementation of the NFIP that communities began feeling pressure from developers and property owners, so communities often sought to "remove" land from the mapped 100-year flood zone. The presence of a 100-year levee, when accredited under the NFIP, removes the flood zone designation from the "protected" property, and thus eliminates the NFIP requirement to comply with construction standards, such as elevation of any new or substantially improved buildings in that area, and also removes requirement for purchasing flood insurance. Increased development in these flood risk areas may provide a short-term economic benefit to the local community with potentially long-term adverse consequences to the community and to the nation's taxpayers.

FEMA leaders emphasize that the 100-year standard for flood insurance purposes was never designed or adopted to be a standard for public safety. However, many factors conspire to make this minimal, 100-year level of protection the most popular standard for new levees. These factors include the attractiveness of short-term relief from NFIP requirements, the ease with which the levee project can be "sold" to the public, and the externalization of catastrophic damage costs due to levee failure away from those who gained the benefits and onto the federal taxpayers. In other words, these 100 year levees became the "buy cheap" option the community chose. The false perception of a federally endorsed 100-year standard of protection combines with local and state budget constraints to prevent communities from fully exploring and selecting greater than 100-year levels of protection or from selecting other mitigation options that may have smaller long term costs, but less federal cost sharing up front. Moreover, even if communities recognize the need for greater protection – for areas of urbanization or where failure will have huge consequences—the economics may become a barrier.

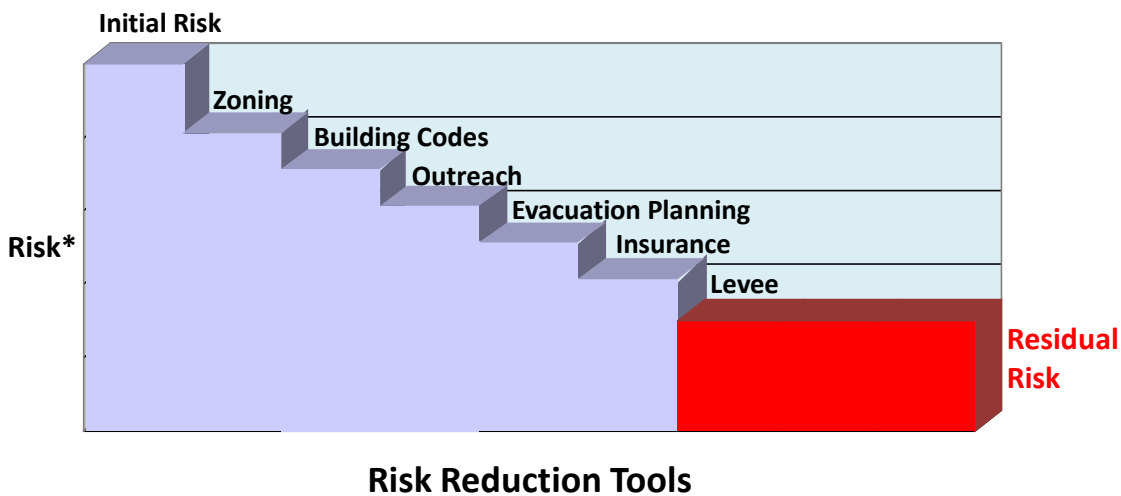
By default, the design standard for levees is currently based on either (1) the 100-year standard of the NFIP, or (2) the level of protection justified using federal, development-oriented policy that attempts to maximize the levee project's net national economic development (NED) return to the nation. While a larger levee may have a positive benefit/cost (B/C) ratio, the B/C may be higher for the 100 year than the 500 year, and the current Principle and Guidelines promote selecting the alternative that "maximizes" the B/C. The NFIP and NED factors, along with cost-sharing requirements and the federal budget process, have resulted in "lowering the bar" for most levees in the nation to the 100-year standard, even in cases in which the consequences of the failure of a particular levee would be catastrophic. They also can result in ignoring the options of non-structural measures that could be used instead of a levee to avoid the catastrophic consequences in larger flood events. Ironically, based on current practice, the nation and citizens would fare better if a community built a "99-year levee," because this would lead to the

continuation of both mandatory flood insurance as well as continued floodplain management construction practices—which collectively would lower vulnerability and risk much more than would a 100-year levee by itself.

4. Residual risk. A significant problem with the management of our levees is that people by and large do not fully understand the nature of flood risk and the fact that it can never be fully eliminated. It is too easy to believe that a levee or other measure provides complete protection from flooding when, in reality, a large “residual” risk remains behind the levee.

Residual risk areas are those lands subject to flooding that continue to have risk, even after a number of mitigation measures have been implemented. The chart below shows how communities can address areas that are considered “protected” by levees by taking a number of mitigation actions. With each additional action, the community “buys” down more of its flood risk. But in the end, there will never be 100% protection---there is still residual risk. More importantly, the chart shows that communities and citizens who rely “only” on a levee are addressing just a small portion of their flood risk. Mapping these residual risk areas and requiring flood insurance in them is essential. Levee standards for protection of urbanized areas and critical infrastructure like hospitals, emergency operation centers, water supply and shelters must be protected to and operational during at least the 0.2% (500-year) flood event or in a Category 5 hurricane in storm surge coastal areas. The larger the levee, the more that risk that will be reduced---but again, only a portion of the flood risk.

Flood Risk Management: Buying Down Risk, One Step at a Time



* Risk = Probability x Consequences

5. Risks are increasing behind levees. Finally, a levee safety problem increases when new homes and businesses are being allowed behind to be built or redeveloped with more costly structures behind levees. This is especially the case if it is an agricultural levee that was designed just to

lessen periodic flooding of crops. These levees were never meant to accommodate even the 100-year flood, and they certainly don't meet the higher level of protection that is appropriate for urbanizing areas. Moreover, legacy levee structures that may have been designed to withstand a 100-year flood have been rendered ineffective due to development in the watershed that increased runoff, or due to the more severe rainfall events associated with our changing climate.

The conditions that led to the "Era of Unintended Consequences" just described have long been recognized by policy experts. In fact, leaders of both the Corps and FEMA acknowledged as early as the 1970s that the 100-year standard was inappropriate for levees in urbanized areas. In recent decades, numerous reports have called for a sharing of responsibilities and accountability among all levels of government, business, and private citizens; balance among the many competing uses and functions of rivers, coasts, and floodplains; and for the national coordinated strategy for management of the nation's waterways and floodplains.²

B. The Need for a National Flood Risk Management Policy and Framework

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 is a levee should be built at all.

The Committee's recommendations are prefaced by recognition of a need for a broader national flood risk management approach, and for leveraging levee safety as a critical step in a national infrastructure investment. However, the report deals with levees as an entity unto themselves lacking any nexus to land use decisions, regional or watershed based flood risk management, and existing or proposed levees. Additionally, the report is nearly silent and makes no specific recommendations for requiring appropriate land use decisions to accompany federal investment in building new levees, or when rehabilitating existing levees.

States and local governments will make more economically sound and sustainable decisions when the responsibilities for flood risk management activities are shared more and also are clearly defined. Although land use planning and management is a local and state function, the federal government plays an important role in helping communities guide development safely from harm, by attaching conditions to the availability and cost-sharing of federal dollars and also through its policies and regulatory guidance.

When they are built, levees should be the mitigation measure of last resort, after steps such as accurate floodplain designations, adoption of building and land use standards to guide development to avoid high risk areas and build safer in low flood risk areas, management of runoff from developed areas, relocation of existing development from flood-prone areas, approval of intergovernmental agreements in larger watersheds, and wetlands revitalization, have been implemented. Additionally, the impacts of building a levee on areas downstream, upstream

² A list of these reports is provided as an addendum to this testimony.

and across the river must be fully identified, evaluated and mitigated, since hemming in the river and pinching in the floodplain will increase flood heights in other areas. Levees have a huge effect on the ability of a river or estuary to provide the natural and beneficial functions upon which we rely --the functions of flood storage or conveyance, water quality, habitat, and others that are the natural functions of floodplains. Rivers and estuaries are the life blood of our ecosystems. When we build levees on the bank of the river, we lose all those functions and put added strain on the levee for erosion and flood levels, which increases the chance of failure of the levee and of increasing flood levels on other property. Levees should only be considered in the context of a systems-based approach that evaluates levee setbacks to allow room for river flows and other natural functions, and combines a levee with complementary measures to slow and absorb flows.

However, a range of government regulations and financial and insurance incentives instead often make levees a leading option for many local governments. In order to remove the perverse incentives currently driving many flood risk management decisions toward the structural alternative alone, state and local governments must be required to demonstrate that all other nonstructural approaches have been fully considered, including a combination of structural and nonstructural solutions. For those cases where a levee is truly the most effective risk management strategy, nonfederal partners must provide clear assurance and demonstrate their commitment and ability to perform long term operation and maintenance of the levee not only to protect this significant federal investment, but also to prevent inappropriate reliance on potentially hazardous structures.

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, during FY09. 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.³ 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:

..risk communication is especially important in situations such as levee construction where the community is often emboldened by an erroneous

³ 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.

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.

[T]he solution to levee safety and flood-risk reduction must be developed within the complex context of community development, land use, building codes, emergency preparedness (especially warning, evacuation, and risk communication), as well as an efficient and orderly system of indemnification for the inevitable losses when levees fail or are overtopped

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. Congress wisely intended that those levees that do not meet certain criteria not be depicted on flood maps as providing protection. 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.

Another issue being discussed is that of perceived legal liability associated with performing levee certification work. We understand that some engineering firms have decided to stop providing levee-related services due to these concerns. Some engineers are calling for legislation to cap their liability and otherwise limit their exposure for levee-related work. It is the view of ASFPM that there are firms performing this levee certification, and the issue is not ripe for a legislative solution, and the ASFPM would not support liability caps for levee-related work. However, Congress could lead the development and adoption of uniform national standards of care for all levee projects and for levee maintenance activities, by tasking the National Levee Safety Commission, or another entity to do this. Additionally, a national standard of care for levee systems would facilitate development of market-based incentives between liability insurers and policyholders to support industry best practices.

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.

C. ASFPM Response to the Report of the National Committee on Levee Safety⁴

The recommendations put forth in the report of the National Committee on Levee Safety provide important insights to the possible scope of the nation's exposure, and into certain key governance, engineering, and public affairs measures designed to ensure that levees are well understood, constructed, and maintained. ASFPM commends the work of the Congress and the NCLS, especially to recognize where levees differ from dams and call for a differentiated management framework. Although ASFPM supports much of the report and many recommendations, during the review process we identified important gaps that will need to be addressed in order for the National Levee Safety Program to be sustainable and effective.

As noted above, we support the expansion of the National Levee Database to include nonfederal levees, and encourage Congress to act swiftly on this important first step to identify and begin to manage the full scope of the nation's levee-related risks.⁵ The development and adoption of National Levee Safety Standards will help ensure that the best engineering practices are brought to bear, and help address liability concerns. Although ASFPM supports the concept of a national discussion on flood risk and tolerable risk guidelines, that effort would be better served by consideration of the full breadth of flood risk management strategies.⁶

ASFPM strongly supports the requirement that properties protected by a levee be insured against flood damage. 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. One option would be making vouchers available through HUD to support the transition to risk-based flood insurance premiums.

We also agree that a Levee Hazard Classification System will help prioritize where resources can prevent the most harm. However, the classification system put forth in the NCLS Report, which

⁴ ASFPM Comments to the Report of the National Committee on Levee Safety are available at http://www.floods.org/PDF/Levees/NCLS_Report_Review_Committee_Comments_from_ASFPM_1208.pdf.

⁵ The costs of inspection of nonfederal levees should be the responsibility of the levee owner. Failure to provide adequate inspection should disqualify the levee owner from eligibility for any federal funds for that levee.

⁶ Furthermore, the concept is currently abstract at best, and experience shows that communities and citizens will tolerate considerable risk as long as someone else pays the consequences. Until a levee safety program is in place that places greater responsibility on those who live at risk or contribute to risk associated with levees, any discussion of tolerable risk is premature.

would classify a levee endangering 999 families as one of “Low Hazard,” falls far short of what is needed. We recommend that the classification system rate any levee that presents a risk of loss of life as “High;” any that threatens real property as “Significant,” and reserve the “Low” classification for those levees that threaten neither real property, nor lives.

We could support the NCLS recommendation calling for an independent and multidisciplinary National Levee Safety Commission to provide for consistent national leadership and standards if it were done properly. Moreover, as discussed above, we encourage Congress to craft a national flood risk management policy and task a national governing body to oversee the many public interests in reducing flood losses beyond the realm of levees. Such a body would be best positioned to oversee the development of programs for risk communication, training, and technical assistance to states and local governments. In addition, research and development efforts to advance techniques and practices for all flood risk management activities – not just for levees – will be best served by oversight from a governing body tasked to consider the broad range of approaches to stabilize and manage flood risks in the nation.

Although the NCLS Report identifies minimal criteria for participation in a National Levee Safety Program and potential access to 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.

Strong state levee safety programs should be the objective of the new nationwide program, because states are endowed with constitutional authority to authorize, oversee and enforce levee improvements and adequacy, other alternatives, and the land use associated with them to reduce flood risk. However, the delegation of programmatic responsibilities of key public safety programs should not extend beyond the states until more measures and governance are in place. Further, tangible consequences should exist for those states that choose not to participate.

States will need strong incentives to modify the existing federal disaster relief environment. The minimum qualifications for federal levee funding must include participation in the NFIP and regulation of all development that is or will be impacted by levee failure or overtopping. States should face sanctions and not be eligible to receive any type of federal assistance within levee protected zones if that state is not participating in the NFIP program. Federal funds such as PL 84-99 and disaster relief funds for any levee-related damage should not be available to any entity that is not in compliance with a national or state levee safety program, or to any community that does not participate in the NFIP. We further suggest consideration of a COBRA-like sanction of no federal assistance within levee protected zones if a state is not participating in the program. At some point, the non-availability of federal flood insurance within the state could be phased in as a sanction for states that are not participating in these programs.

D. Additional Recommendations to Incentivize Sustainable Flood Risk Management and Levee Safety

As noted above, the NCLS Report provided important insights regarding engineering, evacuation, and education related to levees. However, key opportunities to support sound management principles at all levels of government were not fully explored in the report and remain untapped. In fact, after each major flood in our nation's modern history, experts have gathered to consider the flooding problem and craft recommendations for the future.⁷ Unfortunately, we have "hit the snooze button" for public policy change in response to these wake-up calls, and have paid a high price in subsequent flood disasters.

The 1994 report, *Sharing the Challenge: Floodplain Management into the 21st Century*, known as the Galloway Report, authors made specific recommendations to the Clinton Administration for changes to federal policies, programs, and activities to reduce flood risk associated with levees. The report emphasized that the existing "loose aggregation of federal, local, and individual levees ... does not ensure the desired reduction in the vulnerability of floodplain activities to damages." The report's recommendations from more than fifteen years ago reverberate over the years to remind us all that, for decades, leaders on these issues have made the same recommendations grounded in common sense measures. These include the following:

- To reduce the vulnerability to flood damages of those in the floodplain, the Administration should:
 - Give full consideration to all possible alternatives for vulnerability reduction, including permanent evacuation of floodprone areas, flood warning, floodproofing of structures remaining in the floodplain, creation of additional natural and artificial storage, and adequately sized and maintained levees and other structures;
 - Adopt flood damage reduction guidelines based on a revised *Principles and Guidelines* which would give full weight to social, economic, and environmental values and assure that all vulnerability reduction alternatives are given equal consideration; and
 - Where appropriate, reduce the vulnerability of population centers and critical infrastructure to the standard project flood discharge through use of floodplain management activities and programs.
- Increase the state role in all floodplain management activities including, but not limited to, flood fighting, recovery, hazard mitigation, buyout, floodplain regulation, levee permitting, zoning, enforcement, and planning.
- To ensure the integrity of levee and the environmental and hydraulic efficiencies of the floodplain, states and tribes should ensure proper siting, construction, and maintenance of non-federal levees.
- Require actuarial-based flood insurance behind all levees that provide protection less than the standard project. A mandatory flood insurance purchase requirement behind such levees would provide a number of benefits to the public and to property owners:

⁷ A bibliography of many of the existing reports and recommendations is on the ASFPM web site

- Property owners would be insured against the real possibility that a levee will be overtopped or will fail,
- Federal expenditures for disaster assistance would decline,
- Property owners would be more fully aware of the residual risk in building or locating behind a levee, and
- Communities would have an incentive to seek higher levels of protection.

Additionally, the Galloway Report makes the following specific recommendations regarding Corps programs and practices:

- The Administration should reaffirm its support for the USACE criteria under the PL 84-99 levee repair program and send a clear message that future exceptions will not be made.
- The USACE should investigate procedures to minimize impacts associated with levee overtopping. Differing methods to lessen levee overtopping impacts should be investigated. A report should be prepared by USACE that details preferred engineering techniques to improve current levee structures, where appropriate.
- Federal and state officials should restrict support of flood fighting to those levees that have been approved for flood fighting by the USACE.

Sustainable flood risk management and levee safety can best be achieved through sound, shared management at all levels and the private sector. To foster those sound approaches and discourage ineffective, costly approaches, the ASFPM recommends the following additional steps.

- ASFPM recommends that the national flood risk or levee safety commission be tasked with the full exploration of federal programs, such as HUD's Community Development Block Grants, transportation, and EPA state revolving funds and watershed funds, to leverage eligibility in those programs for projects in leveed areas. The commission should report on how the cost of these incentives to the federal taxpayers will be offset by savings in disaster and other federal program costs that will be reduced by effective flood risk and levee safety programs.
- The PL 84-99 and FEMA Disaster Relief Programs often serve to shift the consequences of inadequate levees or non-federal responsibilities associated with them from levee owners and communities to the federal taxpayers. We recommend that the PL 84-99 and the disaster relief programs be reviewed and aligned with the flood risk management, levee safety, and the NFIP. As noted above, PL 84-99 for any levee-related damage should not be available for levees that provide less than 100-year protection, to any entity that is not in compliance with a national or state levee safety program, or to any community that does not participate in the NFIP.
- Federal investments in new levees should not be made for a structure that provides less than 500-year protection, and the Corps process maximizing the NED should explicitly incorporate this standard as a lower boundary for federal investment. In addition, Congress and the Administration should adopt a standard of 500+ year protection for levee design as the minimum standard for purposes of flood insurance and other federal

investment.⁸ These requirements should be phased in for existing levees, which will need a significant phase in period

- Before a levee is federally recognized as providing a certain level of protection (and this must include protection from future levels of flooding) and before a levee project is approved for construction, reconstruction, or repair, the local sponsor must clearly demonstrate the financial and administrative capability to provide for operation and maintenance for the life of the structure.
- Federal funding should be allocated in ways that promote a more collaborative working relationship among states and communities that share waterways and watersheds. To prevent flood damage, for example, a larger federal cost share could be provided for those risk management projects that were developed collaboratively and that considered opportunities to avoid increasing flood levels in other communities/areas and also limit adverse environmental effects. To hold down increases in flood levels and better protect water quality, some funding could be targeted to (1) encourage greater state and local investment in water quality planning that aims to reduce or better manage urban runoff; (2) encourage the implementation of protective land use strategies, such as acquisition and relocation of existing structures at high risk and preservation of floodplains as open space; and (3) promote collaborative flood risk, water quality, and land use plans that take a regional focus on environmental impacts and involve all the relevant local jurisdictions within a watershed.
- Federal funding should be consistent with state and local hazard mitigation plans, growth management initiatives, and environmental needs. For example, consideration should be given to whether federal funds for transportation, water treatment, and other infrastructure are providing incentives to build in flood-prone areas. Beyond funding incentives, the federal government can also play an important role in encouraging sound practices. For example, the federal government could encourage states and localities to reform outdated planning laws that hinder efforts to conduct comprehensive flood risk management and land use planning.

E. Recommended Next Steps to Address the Problem in Advance of the Next Big Flood

As can be seen from the Levee Safety Committee report and this testimony, the issues surrounding a levee safety program are many and they are complex. ASFPM suggests that Congress not attempt to lay out the entire future of a national levee safety program at this time. First of all, the report you just received does not give you adequate information to do that, and until you see an inventory of all levees in the nation— the number of miles, their ownership, and their general condition—with some general estimate of the cost and time it will take to address the existing inventory of levees, it is not reasonable to craft a final solution. These just-mentioned factors will need to be cross matched with new standards for level of protection and design, construction, operation and maintenance of levees, and a vision of how the responsibility

⁸ Existing levees that provide less than 500-year protection but meet all requirements for design, maintenance, and operation, and are recognized by federal programs as meeting the standards for 100-year protection, could be granted grandfather status. Criteria should be developed to determine when and if protection provided by a specific levee would need to be upgraded and how that would be achieved.

for flood risk associated with levees is to be shared among all levels of government, the private sector and especially those people, businesses, and communities “protected” by levees.

These latter elements need to be developed, and this could be one of the first tasks of a commission or whatever oversight group Congress might set up. The oversight group could explore and develop those components, determine the progress in each state toward a levee safety program, and expand and refine the incentives and disincentives the federal government could adopt that will foster this shared responsibility. Those efforts can proceed concurrent with the inventory, so within a couple of years Congress would have the information and full picture, enabling you to then establish a more complete national levee safety program.

In the meantime, some first steps Congress could take at this time might include:

- Draft and enact a Levee Safety Act of 2009 to stand up the National Levee Safety Commission or similar independent oversight body to develop data and craft next step recommendations to Congress.
- Task the new Commission with overseeing completion of the National Levee Inventory, including nonfederal levees, and reporting to Congress within a certain time on:
 - State capabilities and possible barriers to the creation of robust state levee safety programs throughout the nation.
 - Further exploration and recommendations for incentives for state and local flood risk and levee safety programs
 - Initiate development of national engineering standards for levees and their operation and maintenance

CONCLUSION

As each hurricane and riverine flood disaster raises awareness of the instability and insecurity of the current flooding predicament, the nation is waking up to find that we cannot afford to continue to live in a disaster relief environment. The NCLS Report provided important guidance on engineering, evacuation, and education related to levees. However, key opportunities remain untapped.

Since the intent of the National Levee Safety Program is to improve public safety, and levees have proven to fail with catastrophic consequences, one of the cornerstones of an effective program for the nation must include a requirement for investigations into alternatives before levees are built or identified for rehabilitation or improvement. The lack of mitigation alternatives or incentives is a major deficiency of the NCLS Report. Flood insurance and public education alone are not sufficient to mitigate fully the devastating effects of levee failure. Effective mitigation can take many forms, but the most sustainable and successful mitigation actions entail local and state initiatives to achieve the following:

- Levees should not be built or enlarged to protect undeveloped land, or for deep floodplains or high-risk storm surge areas due to the dire consequences when these levees fail or are overtopped;
- The Federal government should not invest in any new levees that provide less than PMF or 500+ year protection, and take climate change into account;
- The new national flood risk management and levee safety policy should call for the

gradual retreat of levees away from rivers and coasts, provide for setback levees, and give rivers room to flood and so that floodplains can perform their natural flood reduction function and provide other benefits;⁹

- No new federal levees or investments for levee repair or rehabilitation should be considered without prior consideration of nonstructural and of hybrid nonstructural/structural approaches;
- The Federal *Principles and Guidelines* should give full weight to social, economic, and environmental values and assure that all vulnerability reduction alternatives are given full and equal consideration;
- States and local governments that participate in a national levee safety program and access federal resources must be required to fully consider the broad range of nonstructural and hybrid nonstructural/structural solutions;
- Water resources should be managed and planned for on a watershed basis, and Federal funding should be allocated in ways that promote a more collaborative working relationship among states and communities that share waterways and watersheds
- State and local plans and activities for development and hazard mitigation should reflect all hazards and identify actions with multiple benefit;
- No levee should be cost shared with federal resources unless the non-federal partner has assured funding for long term operation and maintenance.
- Flood-prone areas should be restored and permanently preserved as open space, through land acquisition, buyout and relocation, and adoption of open space plans; and
- Critical facilities sited out of harm's way and also be protected to and operational during the 500-year flood, using future development for calculating the 500 year flood.

States and local governments that have committed to these measures fare best in floods, and should be showcased as examples to follow. Moreover, these practices should be incentivized since they demonstrate the commitment needed to be worthy of trust to care for a significant federal investment. Those policies and practices that contribute to the ever-increasing risk of loss of life and property in floods should be eliminated; not incentivized with continued outpourings of federal resources.

As Congress considers the report and its recommendations, ASFPM stands ready to provide assistance to assure the protection and sound management of the federal investment in, and the long-term sustainability of, the National Levee Safety Program. The ASFPM represents the federal government's state and local partners in the continuing quest to reduce flood damage and disasters. Today, we once again stand at a crossroads--- with an opportunity to work with you to craft a national flood risk management policy framework that will serve the nation for decades to come. Thank you for the opportunity to provide the wisdom and expertise of our members on these important issues.

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⁹ The State of California is leading the way with this approach. The nation should follow its lead.