Flood damage is a direct consequence of floodplain investment activities, both public and private. Those who occupy and use the floodplain should be responsible for the consequences of their actions. The federal government is clearly responsible for federal activities that invade the floodplain. But the authority and responsibility for guiding and controlling how land is used by the private sector and others lies exclusively with non-federal entities. All land use authority flows from the states, so is accomplished by either the state or local government. To the degree that state and local governments sanction unfettered floodplain development (including new construction of public facilities), they share responsibility for excessive flood damage, and should therefore share a concomitant portion of the consequences and costs.

Congress should amend the Disaster Relief Act to apportion the costs, roles, and responsibilities of states and localities, the federal government, and the public in a manner that is commensurate with the risk faced by each entity. Citizens, businesses, and local and state legislators need to better understand that the federal government will not always bail them out after a flood. Federal programs and federal disaster relief policies must use incentives to induce people and state and local governments to bear their fair share of the risk.

The federal agencies, in collaboration with states, localities, and the private sector, must find clearer ways to communicate flood risk so that it is meaningful to citizens and communities, thus enabling them to take appropriate steps to reduce risk and damage.

**Federal Role**

In its concern for the general welfare, the federal government has a proper interest in measures to hold flood damage to an economic minimum. It has a responsibility to discourage floodplain development that would impose a later burden upon federal taxpayers, that would benefit a few at the expense of others, or that would victimize unsuspecting citizens. It does not follow, however, that the federal government should be solely responsible for the success of a program to reduce flood losses and human suffering over the long term through a plethora of measures both in and outside the floodplain.

Yet, due to the policies of the last 70 years, the federal government has been cast in that role. For example, the Katrina disaster in New Orleans has been characterized as a failure at the federal level, even though the state and local governments allowed and encouraged development of the city, and failed to perform their roles in operating and maintaining the levee system and being prepared to evacuate the population. What is lacking is the state and local responsibility and capacity for anticipating and mitigating the adverse impacts and losses from flood hazards in their jurisdictions. That is why the ASFPM believes that incentives should be provided by the federal government to reward those states, localities, and individuals who are taking initiative to break the cycle of development, damage, and redevelopment at federal expense and instead build their own capability to manage flood hazards and floodplain resources in a sustainable manner.

The optimal federal role would be (1) leadership, including appropriate laws and executive orders to create an effective framework for flood loss reduction throughout the nation; (2) information provision, including developing and/or setting criteria for collection, maintenance, and archiving of solid data, including maps, stream gages, forecasts, flood damage data, and watershed studies;
(3) providing for flood insurance and associated mechanisms; and (4) facilitation, by wielding appropriate incentives and consequences to encourage individuals, communities, states, and the private sector to take appropriate actions and decisions to reduce flood losses and to conserve and enhance the natural functions and resources of floodplains and coastal areas. The federal agencies must see their role not as “doing” the planning and implementation of projects, but as fostering the development of state and local capability and programs to reduce flood risk and costs. There are several ways in which this can be done, as described below.

- Public Assistance and mitigation funding should be withheld from the damaged floodplain areas of communities not enrolled in (or not in compliance with) the National Flood Insurance Program (NFIP). Today there are few, if any, economic sanctions for local governments that fail to participate in the NFIP, even though their failure to do so makes their citizens ineligible for Individual Assistance, federal home loans, some grants, and other services. In effect, the citizens are being penalized while the municipality continues to get bailed out by federal taxpayers.

- Similarly, the non-federal share of disaster assistance costs should be reduced in communities where state and local efforts are mitigating the flood hazard. Proposals before Congress have suggested penalizing communities that do not achieve a minimum standard, but an incentive program makes more sense both politically and from a public policy standpoint. An even more effective approach to generating positive state and local actions would be to amend existing law to so that the pro-active entities would be allowed to bank some portion of the funds they spend as the non-federal share of their next disaster. This could be an especially effective approach for encouraging investments in capability at the state level, where state legislatures could see it as a “pay now or pay later” scenario.

- National standards should be developed for the design, placement, construction, and reconstruction of infrastructure after disasters, including roads, bridges, railroads, and other facilities. These standards must be high enough to ensure that damage from future floods and other hazards is avoided. Communities that adopt these minimum standards (or higher ones) should receive proportionally increased federal Public Assistance after disasters and increased funding for mitigation projects.

- Federal financial assistance for flood losses should be based upon the individual’s demonstrated willingness to mitigate the risk. The ASFPM believes that flood insurance is the best means of accomplishing this. For example, those living in identified flood hazard areas should not receive disaster assistance if a flood insurance policy was not in place at the time of the flood.

- The premiums on structures with repetitive losses and on any structures that are not primary residences should continue to be adjusted to reflect the actual risk.

- Federal incentives and programs for farmers like the Conservation Reserve Program, the Wetlands Reserve Program, and permanent easements, are vital financial assistance in the development of sustainable uses for floodprone lands. These sorts of incentives should be continued and generously supported.
Highly subsidized crop insurance and flood disaster payments on floodprone agricultural lands should be discontinued, as they are neither sustainable nor sensible public policy. Crops that can withstand flooding, add carbon sequestration, demand little or no chemicals, and provide a good return for the farmer now exist, and can be encouraged with incentives.

Agricultural properties subject to repetitive flooding should be denied subsidized crop insurance and flood disaster payments if their owners turn down offers to purchase permanent easements or refuse to convert to sustainable crops.

Federal assistance to states and localities for flood control structures, nonstructural flood measures, mitigation, and flood disaster assistance should all be based on the same, sliding cost-sharing formula, to provide an incentive. A minimum cost share would be available to all localities but the federal share would be increased for communities and states that engage in disaster-resistant activities exceeding minimum criteria, are implementing aggressive mitigation programs, or that elect nonstructural projects to mitigate flood risk.

Federal financial assistance should not be provided to states or localities to build or rebuild public infrastructure that would encourage development in high-risk flood hazard areas.

Federal disaster assistance and NFIP participation should be made contingent upon states’ ensuring that their regulations, funding, and programs are compliant with the NFIP.

Nonstructural measures that permanently remove property from high risk zones should receive a higher federal cost share because in the long run these measure save federal dollars that would otherwise be necessary for operation and maintenance of structural works and/or for the repair of damaged property after a flood. Congress should raise the non-federal share of the standard formula used by the Corps of Engineers so that all nonstructural water resources projects it undertakes use a 75/25 federal/non-federal ratio.

All taxpayer-funded flood disaster relief should be contingent upon taking flood mitigation action where feasible—whether public or private.

The federal government should set an example by enforcing appropriate restrictions on floodplain lands it leases, and terminating those leases on schedule. In some areas of the nation, buildings exist on floodplain lands leased from the Corps. These leases were intended only to “live out” the original landowners and then expire, and they included clauses specifying that neither flood insurance nor flood disaster relief would be available to the owners. A further condition was that the buildings were not to be converted into permanent homes, although most of them have been. However, because of political pressure, hundreds of these properties receive flood insurance claims payments and disaster relief, and leases are being renewed because Congress will not allow the Corps to terminate them. In Illinois, these properties make up a significant proportion of the state’s repetitive loss properties.

The federal government should encourage market-driven private-sector incentives for flood mitigation.
Risk Awareness and Individual Accountability

Federal attempts to resolve the problem of rising flood losses should focus on promoting sound investment decisions by individuals. The most significant national impact will be realized through millions of individual decisions and actions rather than through a handful of government decisions and actions, even though each of the latter may be larger in scope. The federal government can take the following steps to make it easier for people to make the "right" decisions.

- Federal monetary assistance for individuals should be based upon whether they had a flood insurance policy before the disaster, even if their property lies outside of the 100-year floodplain. The total amount of assistance received by an individual should be reduced (or a portion of it converted to loans) to reflect the amount of damage that could have been covered by a flood insurance policy.

- FEMA should develop and implement procedures by which the Director can mandate implementation of mitigation measures for structures for which it would be cost-effective. Those who use their flood insurance claim payment for mitigation should be further rewarded by receiving an additional increment of support in the form of a grant.

- Flood insurance rates for any structure that is not a primary residence should be based on the actual risk to the structure. This includes second homes, vacation homes, rental properties, and businesses.

- Subsidized insurance for pre-FIRM primary residences should be gradually raised to actuarial rates in order to encourage mitigation.

- FEMA should encourage the insurance industry to rate flood insurance as a component of all homeowner’s policies. Property owners would have the ability to opt out of the flood coverage and use the NFIP policy, but once it is in place many would likely retain it.

- FEMA should evaluate ways to eliminate the use of Letters of Map Revision (issued after the use of fill or the modification of a channel to alter the floodplain) to avoid the purchase of flood insurance. The most direct approach would be to discontinue the practice of waiving flood insurance after issuance of a Letter of Map Revision based on Fill. Properties for which a Letter of Map Revision based on Fill is issued would still enjoy the reduced flood insurance premium rates that are assigned to an elevated structure.

State and Local Capability

Traditional flood protection programs have resulted in heavy reliance on federal programs, planning, and implementation with little or no consideration given to building local and state capability. (A partial exception is the NFIP.) This arrangement was fairly effective when federal funds were abundant, the construction of flood control works was widespread, fewer communities were involved, and our view of damage prevention was short term and narrower. But, based on current trends, future federal budgets will no longer support this approach on a wide scale. The federal budget cannot continue to fund large disaster costs, and current approaches have not resulted in reducing flood damage.
Further, local involvement and impetus is essential for a truly sustainable approach. Experience indicates that the best local floodplain management takes place where there are strong state floodplain management programs. As discussed below, the experience of other federal programs has been that using federal leadership to build state and local capability and resources is an efficient way to achieve national goals, but that state direction and initiative need to be fostered. Flood protection in the future will be a state and local effort, and federal policy must shift and recognize the need to support and build that capability.

The role of the state government is to provide, as necessary, authority and policy development, technical assistance, training and tools to communities, coordination, and prioritization and integration of floodplain management issues within that state. The federal-state-local relationship must be modified in the following ways to reflect current and future policy needs and budget realities.

- In order to provide adequate assistance in building strong local programs, and to meet these other goals, states should develop, fund, and implement adequate technical and financial assistance initiatives to train, oversee, assist, and monitor local programs. These should include but not be limited to ongoing collaboration among all state agencies that have an impact on flood losses and hazards, issuance and implementation of a state-level executive order on floodplain management, and coordination of NFIP activities within each state. States thus should come to view the NFIP’s Community Assistance Program only as an auxiliary funding source; and the Community Assistance Program itself should be designed to leverage building state and local capability and encourage less oversight and more long-range planning and mitigation initiatives. If necessary, federal incentives should be provided to induce such actions.

- States should help their communities incorporate progressive floodplain management approaches into other community processes, as outlined in detail in ASFPM’s *No Adverse Impact Toolkit* (ASFPM, 2003). Incentives to and support for this effort should be provided by all federal programs.

- States should combine resources for disaster response and short- and long-term recovery by joining existing or proposing new regional mutual aid compacts.

- Qualified states should be delegated the authority and funding to perform and administer floodplain mapping programs for FEMA, administer the Hazard Mitigation Grant Program and the Flood Mitigation Assistance Program, and conduct environmental reviews for mitigation projects. This will help build state capability and streamline and hasten the implementation of programs, which will reduce flood losses over the long term.

- States and communities should be encouraged to develop the capability to do their own engineering studies and reviews, such as reviewing Letter of Map Change submissions. Incentives are needed for states to develop strong levee and dam safety initiatives and integrate them with their flood hazard programs. Delegation of such authorities should be made to a locality only through a state or with concurrence of the state.

- Encouragement and support should be given by federal agencies and states to professional certification programs for floodplain managers, adjusters, agents, and others.
The federal government should encourage the integration of the certification programs for administrators of the International Codes and for floodplain managers.

Local governments must become the focus of hazard mitigation efforts. Using comprehensive local plans that consider the entire watershed and address multiple community issues and concerns is the best way to manage development so that a viable climate is created for economic growth, hazard resiliency, resource protection, and social and environmental equity. Many communities are using the approaches outlined in the No Adverse Impact Toolkit for community activities in mapping, education and outreach, planning, regulations and development standards, mitigation, infrastructure, and emergency services.

Local governments need to be encouraged, via federal incentives and other means, to better integrate floodplain management regulations into their overall land use and conservation plans.

Mitigation funds should not be available to a locality unless it has a comprehensive mitigation plan in place. Communities must be provided with the tools, responsibility, rewards, and a workable process through which they can move toward sustainable development approaches that engage their citizens, the private sector, and nongovernmental organizations.

The successful activities of communities that participate in the Community Rating System of the NFIP should be publicized and shared.

**State Delegation and Partnering**

A true partnership among the federal, state, and local levels of government is essential to effective management of flood risk and floodplain resources. Federal leadership, guidance, and incentives are needed to entice states to take responsibility, and then state and local capability and resources must be developed, again with federal participation. A top-down planning and implementation process does not foster this partnership. In fact, it tends to result in continuing reliance on the federal government.

Further, FEMA recognizes that it is not realistic to expect to add adequate federal staff to facilitate all community floodplain management and mitigation programs. The move to a FEMA/state collaborative effort is essential, and building state capability in order to assist communities is an integral part of an effective solution. A “managing state” arrangement had been tried under FEMA's Hazard Mitigation Grant Program to enable capable and willing states to assume a stronger management role in the program, but met with limited success.

An evaluation of the managing state concept should be conducted to determine how effective it has been in building state capability and improving program outcomes.

FEMA should explore the option of true delegation to states of authority and responsibility for various programs in mitigation, including many aspects of the NFIP (mapping, map changes, community training, technical assistance, monitoring, etc.). Many federal programs already use the delegation model.

Any program to delegate portions of the FEMA programs to the states must be designed
around the goals of building state capability for long-term reduction in hazard losses and suffering. Such an approach should be developed by FEMA in collaboration with its state partners. Effective options needing legislative authority can be presented to Congress with mutual support of FEMA and the states.

- Any delegation approach should function as an incentive to gain broader and increased state involvement and commitment in mitigation. Incentives can range from funding cost shares to more independence, and should be an integral part of the delegation framework.

- The delegation concept should be expanded to other FEMA programs (like the Community Assistance Program, discussed below) as an incentive to build state capability and reduce disaster costs.

**Community Assistance Program**

The Community Assistance Program-State Support Services Element (known as CAP) is a cooperative agreement between FEMA and the states, supported by NFIP funds. Through CAP, FEMA provides funding to the appropriately designated state agencies charged with NFIP oversight. These agencies (designated by individual governors) receive a 75% federal-25% state cost-shared fund to help communities within that state achieve and maintain compliance with the NFIP. CAP funds are also used to conduct flood mitigation and technical assistance activities that support the goals of the both the state floodplain management program and the NFIP. These activities work to mitigate the NFIP’s allowable encroachment into the nation’s floodplains and the increasing risk to the National Flood Insurance Fund. In fact, CAP has been a significant spur for many states to develop and implement broader floodplain management capability—beyond that needed to meet the narrower objectives of the NFIP and ensuring community compliance. Many states’ floodplain management capabilities rely strictly on CAP funding, due to a lack of emphasis by state governments to provide dedicated state funds to the program. Unfortunately, the CAP often has tended to replace state capability rather than encourage states to develop it. Ideally, the CAP should leverage state capability, not replace it.

The trend for CAP to exist primarily as a “measurable” contract between FEMA and the NFIP State Coordinators has curtailed its original partnership concept. There is a need to overhaul the CAP so that it meets both FEMA requirements for ensuring compliance with the NFIP and the floodplain management objectives of the states. It is important to recognize that the vast majority of state activities integrating various state programs that influence flood losses ultimately reduce disaster costs and flood insurance claims, and thus should also be appropriate activities under the CAP. In turn, states should be discouraged from replacing state-paid positions for FEMA-funded positions.

- FEMA needs to view the Community Assistance Program primarily as a state-capability building program, not as a way to obtain services from state assets.

- CAP funding should be based upon clearly understood nationwide criteria that establish a reasonable “minimum floor” of funding for a viable state floodplain management program and also specify what is required to exceed that level of funding. For example, the establishment and maintenance of one fully funded state-paid professional staff

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1For 2002, 28 states reported that 75% or more of their funding for floodplain management salaries came from the CAP (ASFPM, 2004a).
member should be a prerequisite to receiving CAP funding. The ASFPM’s *Effective State Floodplain Management Programs 2003* (ASFPM, 2004b) identifies 10 elements of effective state programs and could be used to develop such funding criteria.

- To further build state capability, the delegation concept should be extended to FEMA’s Community Assistance Program, and funding for that program should reflect a calculated need for effective activities under the NFIP, with annual inflation-linked increases.

- Governor-level commitment to floodplain management and NFIP coordination should be made with every change of state administration. This coordination should be between the FEMA Regional Director and the state governor, and the governor’s commitment should trigger FEMA funding levels.

- States should view the CAP as an auxiliary funding source for ongoing National Flood Insurance Program coordination within their broader floodplain management programs, not as the sole source. FEMA should provide incentives and disincentives that encourage states both to adopt this view and to provide appropriate state resources.

- States participating in the CAP should be allowed to dedicate some proportion—perhaps up to 50%—of their CAP funds to state-selected flood loss reduction projects or activities.

### State and Local Mitigation and Planning

Local planning for floodplain management and mitigation needs to be better emphasized and supported. Localities that have taken the initiative to analyze alternatives and implement their best options should be recognized and rewarded. Floodplain management planning credited by the NFIP’s Community Rating System is used by many communities as a model for developing mitigation plans.

Experience indicates that the best floodplain mitigation occurs in the states that have strong programs. Floodplain management is not unique in this regard. Environmental programs like those established pursuant to the Clean Water Act, the Coastal Zone Management Act, and others, demonstrate that using federal leadership to build state and local capability and resources is an efficient way to achieve national public policy goals. These experiences show that state direction and initiative needs to be fostered. In contrast, the top-down planning and implementation process of existing federal agencies with flood-related missions does not build standing capability within a state, and will result in continuing reliance on the federal government to provide technical plans and funds. To build and support state capability the following ideas should be considered.

- The Pre-disaster Mitigation Program should be managed through allocations to each state based on criteria FEMA develops in cooperation with the states, not run as a national competitive program by FEMA. A step towards this end was put in place for Fiscal Year 2007 and should be evaluated. The PDM program should place a special emphasis on mitigation planning for at least five years.

- The Community Assistance Program needs to be redesigned to encourage more delegation and less oversight and more long-range planning and community assistance.
Technical and financial support and other incentives need to be developed at the state and federal levels to encourage communities to undertake their own mitigation activities.

Technical assistance programs like the Corps’ Flood Plain Management Services and Planning Assistance to States programs, which provide precise technical input into overall state mitigation strategies, should be expanded and receive continued support. Such programs encourage bottom-up planning and local action, as opposed to top-down programs inherent in the Corps’ other water resources programs.

Federal agencies need to provide training for state and local officials in the application procedures for mitigation funding.

State and local hazard mitigation plans should be required to include emergency action plans and no adverse impact approaches.

Federal agencies should encourage states and communities to develop holistic mitigation plans that address multiple federal programs with a comprehensive review process.

Community Rating System
The Community Rating System of the NFIP was established by FEMA as an incentive mechanism aimed at recognizing and encouraging exemplary community floodplain management that exceeds minimum NFIP standards. Flood insurance premiums for residents of communities participating in the Community Rating System are lowered to reflect the reduced flood risk that is a result of community activities that meet the three goals of the Community Rating System: reducing flood losses; facilitating accurate insurance rating; and promoting the awareness of flood insurance. The 1049 communities that participate in the Community Rating System today represent 66% of all NFIP policyholders nationwide. Policyholders in Community Rating System communities receive premium discounts ranging from 5 to 45%. (One community has achieved a rating entitling its policyholders to a 45% discount.) In 2006, the Community Rating System premium discounts amounted to $191 million.

Although it is not perfect, the Community Rating System is a good example of a federally based program that offers incentives to localities for undertaking floodplain management activities. It has been shown to be effective in encouraging new local initiatives and maintaining existing ones. Every nonstructural measure discussed in this paper is rewarded to some extent by the Community Rating System.

States should encourage and assist their communities in joining, maintaining, and improving their standing in the Community Rating System, to increase local capability.

The successes of the local programs of Community Rating System-participating communities should be publicized and transferred to more communities by FEMA.

FEMA should consider identifying certain Community Rating System activities and phasing them in as additional standards and requirements for community participation in the NFIP.
The Community Rating System should be subjected to an independent evaluation to ensure that it is appropriately rewarding practices that truly have long-term flood loss reduction benefits.

Community Rating System credit should be awarded for protecting and maintaining natural storage areas within watersheds.

After each major flood disaster, Community Rating System community compliance should be evaluated to determine what gains have been made due to Community Rating System participation and to see if the program is really mitigating community losses, or just lowering community premiums. There should be clearly established audit mechanisms for Community Rating System communities, especially after disasters.

Other types of incentives should be considered for use within the Community Rating System, besides insurance premium reductions for individual residents. For example, communities might participate more fully if another “reward” were available, such as a grant for a local project or program.

Community-based Public-Private Partnerships
A federal program is needed that fosters the sort of far-reaching mitigation approaches that the ASFPM has called for in the past. It should combine establishing partnerships between the public and private sectors, leveraging resources and energy, and making mitigation a standard part of community planning. Through it, FEMA and other agencies could challenge communities to protect families, businesses, and communities by reducing their susceptibility to all types of natural disasters. It should be based on three premises. First, mitigation is a local issue, best addressed by a local partnership of government, business, and private citizens. Second, private sector participation is essential to comprehensive and long term solutions, because floods and other disasters threaten the economic and commercial growth and sustainability of localities (it is estimated that 85% of the businesses in New Orleans will not re-open). Finally, mitigation is a long-term effort that requires long-term investment.

A community based public-private partnership should be developed by FEMA and/or other federal agencies to promote more pre-disaster mitigation and disaster rebuilding sustainability in communities throughout the nation. The initiative’s underlying concepts should be adopted in other federal and state programs.

Coordination, Oversight, and Evaluation of Programs
Water resource issues are inextricably linked, and efficient accomplishment of agency mandates requires coordination and collaboration among agencies. When Congress passed the National Flood Insurance Act of 1968, it anticipated the gradual development of a broader, nationwide effort to reduce both flood damage and the loss of natural floodplain functions. The periodic progress reports from the Administration to Congress required under the Act (the most recent was in 1994) all have been titled A Unified National Program for Floodplain Management, and discuss the “program” as though it were a distinct, viable initiative.

In reality, however, the Unified National Program has suffered from lack of high-level attention from past and current administrations. The United States has no unified national program for
floodplain management in practice. This stems in part from ambiguity in national goals, and from Congressional direction that yields diffusion of responsibility among levels of government and agencies. This results in uncoordinated, fragmented, inconsistent, and duplicative efforts, gaps in program delivery, and missed opportunities. An attempt was made in the 1990s to reshape the Unified National Program by professionals with the ability to direct a limited number of meagerly funded programs, but without sufficient authority to bring about widespread policy change. If its goals are to be met, the Unified National Program must be elevated within the Administration.

- A water resources coordinating mechanism needs to be established at a high level within the federal government. It could include responsibility for the *Unified National Program for Floodplain Management*, and have oversight to ensure that all federal policies and programs are supportive of (or exceed) the NFIP and the hazard mitigation programs of FEMA and other agencies. Upgraded Executive Orders or other measures are needed; they should tie flood disaster relief and other federal funds to a state’s and community’s participation in and compliance with the NFIP, as well as to the purchase and maintenance of flood insurance.

- One option would be to assign responsibility for the Unified National Program to the Office of Domestic Policy or to the Council on Environmental Quality in the White House, where there could be executive management by senior administration officials, with federal agency participation at the Deputy Director level, using existing agency staff to develop policy regarding the work products.

- Congress should pass an act to establish and implement a National Floodplain Management Policy. It should include a national riparian zone policy of protecting, maintaining, and restoring riverine and coastal areas in order to preserve their natural and beneficial resources as sustainable ecosystems for future generations.

- A coordinated, watershed-based, multi-objective approach for all water resource activities must be adopted. It should include coordination with efforts to improve water quality, quantity, and supply; the creation and maintenance of upland storage; and coordinated planning among upstream, downstream, rural, and urbanized localities within the same watershed.

It is easy to point to specific outcomes of limited policies or programs in floodplain management, but a careful appraisal of the array of policies and activities that have evolved under the NFIP has been missing for a long time. After seven years of effort, the first comprehensive evaluation of the NFIP since its inception now has been completed. Although the various studies carried out under the Evaluation examined the relationship of the NFIP to some components of federal disaster relief, in general the evaluation was weak in its analysis of the linkages to other federal water and watershed programs or to other programs that affect flood losses, such as those of the Corps of Engineers, the Department of Transportation, the Environmental Protection Agency, the Natural Resources Conservation Service, and others.

The NFIP Evaluation does, however, contain a plethora of data that will allow FEMA and its partners to diagnose and prescribe modifications for Congressional and administrative changes that will benefit the nation’s taxpayers, those who are at risk from flooding, and those who will purchase
land and structures that may be at risk. This analysis and diagnosis will require varied types of expertise and partners from the many disciplines related to the NFIP.

- FEMA should establish a team to review and analyze all the reports from the Evaluation of the National Flood Insurance Program with an eye toward identifying the most effective modifications to the existing program, and to propose big-picture changes that may require further analysis or trial efforts. The team should have representatives of FEMA, other federal agencies, experts representing state and local partners, private sector stakeholders, and academia.

- The Pre-Disaster Mitigation Program should be evaluated, to determine the kinds of mitigation measures that are being funded and implemented, and whether they really are reducing losses and protecting floodplain resources. This should include an evaluation of the most effective means of administering the program, such as through state allocations and delegation of responsibility.

- Likewise, a compilation of activities funded by the Flood Mitigation Assistance Program, especially those related to reducing repetitive losses, needs to be done, followed by an analysis of their long-term impacts, to establish future program priorities.

- Periodic independent reviews should be done of state and local floodplain management policies and programs, to identify what successes have been achieved in certain states and locales, what contributed to that success, and how they could be duplicated elsewhere.

- During 2002 and 2003, FEMA funded a project to develop and describe the components of an effective state floodplain management program, which resulted in a report called *Effective State Floodplain Management Programs* (Association of State Floodplain Managers, 2004b). A review and analysis of that product should be done to identify ways in which FEMA can foster states’ moving toward more effective models.

Federal leadership is critical as well to develop the strong, action-oriented programs and policies that are needed at all levels of government and within the private sector both to gain a fuller understanding of the dynamics of changing climate and to minimize its impacts. Such floodplain management measures as mandatory setbacks, higher freeboard allowances, restoration of natural floodplains and wetlands, and modified construction standards need to be explored, along with many other options. Listed below are some steps that the federal government should consider.

- The U.S. Geological Survey and the National Oceanic and Atmospheric Administration should support and participate in domestic and international programs for the collection and analysis of data on climate change.

- Joint evaluation of populations centers should be conducted by the National Oceanic Atmospheric Administration’s Sectoral Applications Research Program (SARR), the Department of Housing and Urban Development, and the Federal Emergency Management Agency (FEMA). This should include scenario-based analysis of the fragility of these areas in the face of a changing climate, the expected types and quantity of damage, its impact on the national economy, and responsible modifications to current
management strategies. This effort should be scoped by a committee of the National Academy of Science.

- When states and communities update their all-hazard plans, FEMA should require that they include an evaluation of the impact of future climate change on their locales, including the potential impacts of sea level rise, extremes in precipitation and runoff, and more severe hurricanes—and include recommendations for adaptation as appropriate.

- The Office of the President should issue an Executive Order directing federal agencies to consider climate change, including adaptations to it, in all their planning, permitting, design, and construction.

**Enforcement of Federal Executive Order 11988**

Executive Order 11988 directs federal agencies to comply with wise floodplain management practices. Although on its face it is a powerful mandate, Executive Order 11988 seems to be receiving only marginal compliance as federal agencies fail to adhere to its spirit and letter, and continue to locate or fund non-floodplain-dependent activities in floodplains, thereby putting these investments at considerable risk as well as increasing flood damage to other properties.

- Compliance with Executive Order 11988 should be overseen and enforced by a specific entity within the Administration.

- In addition, a new Executive Order should be issued, with an expanded scope and mechanisms for enforcement and accountability. This would reaffirm the federal government’s commitment to leadership in floodplain management.

**Funding Mechanisms**

Reliable and ongoing funding must be made available for programs, entities, and activities that foster partnerships, state and local capability, and sustainable approaches to floodplain management. For example, funds for implementing mitigation must extend beyond the post-disaster period, and beyond the federal planning process (which can last 20 years). Federal funding should be used as an incentive to foster state and local programs and projects that go beyond minimum standards; that include mitigation planning; factor hazards into the design and construction of new public infrastructure; require hazard disclosure in property transfers; create economic incentives for retrofitting vulnerable buildings; adopt building codes; and identify and insure at-risk public buildings. Under the current arrangement, federal assistance appears to flow more freely toward localities that have made little or no effort, because they end up with more at risk development and thus sustain more damage.

- Adequate funding should be provided for initiatives that support all aspects of floodplain management, including data collection, forecasting, geographic information systems, FEMA flood mapping, the U.S. Geological Survey streamgaging program, the National Oceanic and Atmospheric Administration’s Integrated Ocean Observing System, scientific research, and analysis.

- Generous and reliable funding is needed for programs that have the most promise for long-term impact. These include technical assistance programs like the Corps’ Flood
Plain Management Services and its Planning Assistance to States programs; mitigation initiatives like the Flood Mitigation Assistance Program and Pre-Disaster Mitigation program, which are not restricted to the post-disaster setting; and programs to purchase permanent easements like the Natural Resource Conservation Service’s Wetland Reserve and Watershed Protection programs. In addition, the Administration should ask Congress to declare Flood Mitigation Assistance funds to be non-federal, because they are generated by flood insurance policyholders and are not taxpayer funds. If they were considered non-federal, these funds could be leveraged for more flood mitigation activities.

- For nonstructural projects, land and easements should be considered part of the total project cost, not a local sponsor requirement. Economics sometimes dictate that non-federal sponsors choose the alternative with the lowest non-federal cost. Due to the high cost of land in many areas, the large amount of land needed for some nonstructural projects, such as evacuation of high risk areas, and the variations in how the cost of a project is shared, often result in a perverse situation in which the alternative with the lowest non-federal cost is often a structural one, even though it may have a higher cost overall to the taxpayers.

- All federal assistance for structural, nonstructural, and disaster assistance programs should be based on the same, sliding cost-sharing formula to provide an incentive to state and local action. Under this concept, a minimum cost-share would be available to all, including communities without financial resources to undertake expensive projects. But the federal share would be increased for communities and states that engage in disaster-resistant activities beyond minimum criteria. Further, nonstructural mitigation projects would always receive a higher share of federal funding than structural projects.