Flood insurance is an important tool for protecting what is most people's largest asset, their house. It provides financial protection to property owners and renters and reduces the cost of disaster assistance paid by taxpayers. Its other advantages as a loss reduction technique are that it can be undertaken at the individual level and that it has the potential, through premium reductions and other techniques, to act as an incentive for adoption of mitigation measures.

The creation of the National Flood Insurance Program (NFIP) in 1968 marked a significant shift in U.S. public policy. The NFIP was the vehicle that brought floodplain management to the nation. The primary strength of the NFIP lies in the local-state-federal partnership it fosters, under which minimum land use management and performance criteria must be adopted and implemented by states and localities in order to be eligible for flood insurance and other continuing federal benefits.

Flood insurance can be a highly effective mechanism for fostering individual responsibility and building local self-sufficiency, thereby contributing to sustainable and disaster-resistant communities. From a federal policy perspective, flood insurance is attractive because it minimizes the amount of taxpayer funds that must go to "bail out" people who have chosen to live in hazardous areas, that is, to pay for disaster assistance to the homeowners, business owners, and renters whose property has been damaged by flooding. Instead of being paid with taxpayers dollars, flood insurance claims, just as with other types of insurance, are paid from a pool funded by the premium dollars paid by people who are taking the risk of living in flood prone areas.

However, Congress and the public should recognize that the NFIP, although modeled on an insurance company, is also a government program geared toward helping people. The flood mapping component of the NFIP needs federal taxpayer support, but also yields nationwide benefits beyond the provision of risk zones for flood insurance. The insurance-company characteristics of the NFIP have enabled the program to be self supporting (except for mapping) in all but catastrophic loss years. If this arrangement is no longer considered to be the best option, alternatives should be examined such as all-hazards insurance or a federal re-insurance framework that would enable private insurers to cover more risks.

**Land Management / Flood Insurance Interaction**

The premise of the NFIP is that the federal government will make flood insurance available to renters and property owners if the local government enforces land use and construction practices that minimize the threat of flooding. However, after nearly 40 years of the NFIP and numerous flood disasters, significant improvements to the NFIP are still needed.

Flood insurance is available at reduced rates for structures outside of mapped floodplains, but there are no management measures required of the community for these areas. Experience and claims history indicate, however, that many who purchase insurance in these unmapped floodplains are subject to an inherent flood risk, and accounted for up to 35% of all claims filed as of 2005 (Galloway, 2006, p. 36).

In most coastal areas, insurance is available; but the regulatory standards and management measures in place for those areas are inadequate to minimize losses effectively. In addition, premium payments do not account for the erosion that takes places in these areas, which not only can result in significant damage but also causes a drain on the flood insurance fund.
The higher-than-expected risk of flooding that is present outside of these and other areas generally identified as high risk requires a reassessment of some current policies and practices.

- Any structure for which a certain number of flood damage claims has been paid (perhaps two) should be mapped, managed, and insured as a floodplain property, without regard to its location with respect to the pre-flood boundaries of the Special Flood Hazard Area.

- In cooperation with its partners and others, the Federal Emergency Management Agency (FEMA) should establish a work group to review and revise the regulatory standards of the NFIP (see section on Nonstructural Mitigation Measures, above). The review should address a zero-rise floodway; freeboard above the base flood elevation to the first floor; elevation certificates for all new floodprone construction (including placement of manufactured homes); flood protection standards for critical use facilities; clear standards and procedures for determining substantial damage and improvements; and stronger construction standards for buildings in coastal A Zones.

- “Substantial improvement” should be redefined under the NFIP so that improvements made to a structure over time are calculated cumulatively, rather than being considered individually.

- In cooperation with its partners, FEMA should revise the NFIP regulations to require that determinations of substantial damage to a property be based on the replacement value minus depreciation.

- Flood claims information needs to be provided by FEMA to local administrators so that they can be alerted to potential problems with the administration of their floodplain ordinances.

- Any payment of an insurance claim for a substantially damaged or improved building should trigger a verification by appropriate FEMA or state personnel that the structure is compliant with NFIP requirements before insurance coverage is continued.

- FEMA should make it permissible to use Flood Mitigation Assistance program funds in limited circumstances for the “mitigation reconstruction” technique, by which a damaged building is demolished and then rebuilt in compliance with the local ordinance and NFIP requirements. If this use of funds proves successful, it should be extended to the competitive grant programs, such as the Pre-Disaster Mitigation program.

- The FEMA Director should be given discretionary authority to require local governments to use advisory maps and advisory base flood elevations for administration of their NFIP-related ordinances, based on input from communities and the state.

- 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 have insurance premium rates based on the flood risk, rather than being exempt from the
flood insurance requirement.

- Additional levels of risk zones should be instituted for floodways (analogous to V Zone ratings), be depicted on flood maps, and be the basis for additional levels of flood insurance rates.

- The NFIP should be modified to provide erosion/mudslide coverage only where those hazards are mapped and managed, possibly via a surcharge.

- Floodplain managers and the insurance industry should continue to improve their working relationships. State and local floodplain managers are in a good position to advise citizens about the basics of insurance availability and to promote the wisdom of the land management/insurance interaction of the NFIP. Continued efforts should be made to educate floodplain managers about the insurance aspects of the program, and insurance agents about floodplain management. One way could be to increase the number and distribution of floodplain-related workshops at the annual National Flood Conference (attended primarily by insurance partners) to encourage more floodplain managers to participate, as well as to further educate the insurance industry about this area. Likewise, the national and state floodplain management associations could encourage more coverage of flood insurance topics at their annual conferences.

- Encouragement and support should be given by federal agencies and states to the professional certification programs for floodplain managers, adjusters, agents, and others. Certification programs for administrators of the International Building Codes should be integrated with those for floodplain managers.

**Flood Insurance Premium Discounts**

A number of inequities persists with regard to current flood insurance premiums. Three types of discounts (categories of structures that are subsidized by the premiums paid on other structures) are notable. However, it must be remembered that all three are internal to the NFIP, that is, paid for by other flood insurance policyholders and not by federal taxpayers. An exception is that catastrophic events and losses are not factored into premium costs, thus the taxpayers do help fund the program in catastrophic loss years.

First, because the NFIP is a national program, the nationwide actuarial rates based on risk may not reflect the true risk in a given location. The effect is that, in certain areas of the floodplain, premiums may be either artificially lower or higher than the actual risk would dictate, because all flood hazards are not equal. Differences in precipitation patterns, flood depths and velocities, topography, and channel conditions produce differing ranges of hazardousness.

The second category of discount includes the “subsidized rates” that result in lowered premiums for structures that existed before the issuance of a community's first Flood Insurance Rate Maps (“pre-FIRM structures”). For the purpose of determining flood insurance premiums, buildings are categorized and rated as either pre-FIRM construction or post-FIRM construction. The post-FIRM rates are for those structures built after flood hazard mapping was done and the communities or counties passed the necessary ordinances and instituted accompanying permitting systems with development standards. The pre-FIRM rates are for those structures that were built before
the community or county joined the NFIP. Usually these pre-FIRM buildings were constructed without taking into account the level of flood risk and may therefore be at higher risk than those constructed according to floodplain management regulations (post-FIRM construction). To keep the rates affordable in these circumstances, less-than-actuarial rates are charged; hence the National Flood Insurance Fund subsidizes the pre-FIRM insurance rates. The original idea was that over the long run the older buildings would reach the end of their design life and gradually be replaced by newer flood-resistant construction. In practice, this is taking longer than anticipated. Meanwhile, the expectation has grown that people who live in high-risk areas should pay actuarial insurance rates based on their exposure to risk. As an aftermath of Hurricane Katrina, there are renewed calls to determine the feasibility of ending these pre-FIRM discounts on certain categories of buildings, such as non-primary residences and non-residential buildings.

The third discount is the administrative grandfathering that occurs when a building is constructed in compliance with the local standards as based on the Flood Insurance Rate Map in effect at the time of construction. If the map is subsequently updated and the building’s flood zone or base flood elevation is changed, the grandfathering rule allows the structure to continue to be rated according to its originally designated zone or base flood elevation. This rule therefore alleviates the financial penalty that would accrue for property owners when a map is changed, since they in fact had built their structure in compliance with the local regulations in effect at the time of construction. Now, due to the financial condition of the NFIP after back-to-back years of catastrophic losses, this discount is also being questioned.

There are several ways in which concerns about these discounts could be addressed.

- More stratification is needed in flood insurance rates to accurately reflect the variations in risk within individual zones.
- Subsidized insurance for pre-FIRM primary residences should be gradually raised to actuarial rates in order to encourage mitigation.
- The Federal Insurance Administration’s grandfathering of flood insurance rates should be eliminated gradually, by means of an automatic reversion to current actuarial rates once a single flood insurance claim is paid for a structure.
- Flood insurance premiums for any building that is not a primary residence should be set at actuarial rates. This includes second homes, vacation homes, rental properties, and businesses.

**Repetitive Losses**

When insurance claims are filed again and again for flood damage to a single building, that building becomes known as a “repetitive loss structure.” There are relatively few insured structures in this category, but they account for a disproportionately large share of all the flood insurance claims filed and paid. While estimates vary, it appears that 2% of the policies held under the NFIP since its inception have accounted for 32% of the losses and received 38% of the dollars paid out from the National Flood Insurance Fund. Geographically, many of these losses are concentrated in coastal areas.
The pre-1999 strategy for alleviating losses due to repetitively flooded buildings relied on the structure's being substantially damaged (damaged 50% or more of its market value), at which time it would be reconstructed, elevated, or floodproofed to prevent future damage. Unfortunately, due both to confusion about how “substantial” damage (or substantial improvement) should be measured, and also to a natural reluctance on the part of local officials to impose perceived hardships on owners of flood-damaged properties, communities have not been consistent in declaring structures substantially damaged when in fact they are. This has resulted, over time, in buildings’ being repeatedly flooded because they are never declared by the community to be substantially damaged and thus are not upgraded. The failure to make these declarations also keeps their owners from qualifying for Increased Cost of Compliance payments under their flood insurance policies, which would help them pay for mitigation measures on the damaged structures. According to FEMA, between 1978 and 2004, 112,540 buildings nationwide had suffered four or more flood losses, or more than two losses that cumulatively equaled or exceeded the building’s value during any 10-year period (King, 2005, p. 36).

FEMA has taken several important programmatic steps to craft, update, and implement its strategy for addressing repetitive loss properties nationwide, including incorporating special incentives into the Community Rating System for repetitive loss communities, distributing data to states and communities to help them address their repetitive loss properties, considering increased insurance rates for repetitive loss structures, and specifically targeting Flood Mitigation Assistance program funds toward repetitively flooded properties. The latter strategy would focus FMA funds on about 10,000 high-risk repetitive loss structures for mitigation, with an eventual estimated NFIP savings of $65 million annually. Further, some states are using Hazard Mitigation Grant Program funding to implement mitigation measures for their repetitive loss properties. Needed policy changes include:

- FEMA should produce rules for a process by which repetitive losses could be financially neutralized by moving to actuarially based premiums and/or deductibles on such structures and adjusting coverage unless mitigation measures (including dry and wet floodproofing) are undertaken. If cost-effective and feasible mitigation options are refused by a property owner, premiums for that structure should be increased to actuarial rates. This incentive-based program, although formally approved in 2004, has yet to be developed by FEMA and must be implemented.
- FEMA should continue its work to refine the reliability of all repetitive loss structure databases and to include information on each building’s location and the risk and reason for flooding.
- FEMA should share the information in all repetitive loss databases with its state and local partners. Congress should amend the Privacy Act as needed to make such sharing permissible.

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<th>States with the Most Repetitive Flood Loss Properties (insured and uninsured)</th>
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**Increased Cost of Compliance Insurance**

New insurance coverage for Increased Cost of Compliance became effective in May 1997, authorized under the 1994 Flood Insurance Reform Act. This coverage reimburses a flood policyholder for at least part of the additional cost of rebuilding or otherwise mitigating the flood risk to a flood-damaged structure as needed to comply with state and local floodplain management laws. FEMA has set the maximum coverage available under Increased Cost of Compliance at $30,000. However, it is estimated that the average cost of bringing a structure into compliance is between $35,000 and $60,000, depending on its geographic location within the United States.

The Increased Cost of Compliance provision could be made more effective by

- Increasing the coverage to at least $50,000, which is the mid-range cost of elevating structures;
- Relaxing the eligibility requirements so more damaged structures could receive mitigation under Increased Cost of Compliance coverage, that is, structures not substantially damaged and those substantially damaged by a non-flood event (such as an earthquake);
- Implementing the third provision of the Increased Cost of Compliance law, which allows the Director of FEMA to required the use of Increased Cost of Compliance for mitigation when it is “beneficial to the National Flood Insurance Program Fund;” and
- Expanding FEMA’s efforts to publicize Increased Cost of Compliance coverage and to increase agent and adjuster understanding of its availability and function.

**Residual Risk of Dams and Levees**

The catastrophic losses that resulted from the levee failures after Hurricane Katrina have forced a re-evaluation of national levee policies. The fact is that levees, dams, diversions, and reservoirs do not eliminate the flood risk to individuals and structures behind them and in many cases, they create a significant and potentially catastrophic residual risk that may increase as conditions in a given region change or as the impacts of climate change begin to be felt. An evaluation of the residual flood risk below or behind such flood reduction structures should determine the proper policy governing insurance requirements and rates. Given the potential for catastrophic losses from failure, these residual risk areas might best be classified with something other than the standard B, C, or X Zones, i.e., AL zones. A special residual risk zone might provide for the implementation of the mandatory insurance purchase requirement, or might allow for appropriate rates, or both, to reflect the hazard. The following changes are needed.

- FEMA should define a new flood insurance zone for areas behind levees that provide 100-year protection and meet other requirements for recognition under the NFIP, that will reflect the level of flood risk faced by those behind the levees. This will help ensure that residents and public officials are aware of the risk.
- Flood insurance in the failure zones associated with all dams, levees, diversions, and reservoirs should be mandatory, with premiums at the preferred risk rate.
FEMA, working with its federal, state, and local partners and levee sponsors, should develop and implement a public awareness and outreach strategy that will improve public official and citizen awareness and understanding of the hazards and risks associated with flood-reduction structures.

**Increasing the Number of Flood Insurance Policies**

After nearly 40 years of the NFIP, the number of flood insurance policies is still unacceptably low. Only about 50% of structures in Special Flood Hazard Areas nationwide are covered by flood insurance (Dixon et al., 2005, p. xiii). Yet the basic premise of using an insurance pooling mechanism to shift the risk of flood damage from all taxpayers to those that have chosen to live at risk remains a good public policy. As a point of comparison, an at-risk structure in a floodplain will have better than a 25% chance of being flooded by the 100-year flood at some time during its 30-year mortgage, but there is only a 9% chance that this same structure would have a fire. Yet few, if any, homeowners or lenders would even consider foregoing fire insurance. This is partly due to a lack of understanding of both the flood risk and the insurance that is offered and, until recently, minimal enforcement of the mandatory purchase provisions for flood insurance.

Unfortunately, until Hurricane Katrina there was little recognition of the exposure of individuals and the nation to catastrophic losses that can result because of the low proportion of buildings that have insurance coverage. Although the NFIP was able to compensate flood losses and pay out over $20 billion in claims, uninsured property owners also received damage and a portion of them were located in high-risk areas. To help increase the number of homeowners, business owners, and renters that are protected by flood insurance, especially in high-risk areas, there needs to be (1) a broader area in which flood insurance is mandatory and stronger enforcement of that requirement; (2) better trained and informed insurance agents; and (3) a vigorous outreach program by FEMA. These approaches are discussed below.

**Mandatory Purchase**

The 1994 ASFPM review called for revision of the mandatory purchase elements of the NFIP to provide for the escrow of flood insurance premiums; imposition of penalties on lenders for noncompliance; withholding of disaster relief from those who willingly drop coverage; and establishment of authority for individuals and agencies to sue agents and lenders that fail to enforce the purchase requirements.

These suggestions were largely addressed when the National Flood Insurance Reform Act final rules for regulated lending institutions became effective in 1996. These provisions were largely responsible for increases in the number of policies from 2.2 million to 4.5 million (out of an estimated 9-11 million buildings in flood hazard areas nationwide) (Dixon et al., 2005, p. 2). However, supposedly only 60% of new mortgages are covered by federally regulated lenders (although some of the remaining 40% are sold on the secondary mortgage market and thus eventually must meet the requirement for flood insurance). Another concern is the large number of homes that are not mortgaged at all and thus are not required to be insured against flood risk. To encourage greater compliance and hence more properties in the high-risk area are protected,

- Flood insurance should be mandatory in 100-year floodplains, 500-year floodplains, in areas subject to coastal storm surge, and in the failure zones (residual risk zones) of dams, levees, diversions, and reservoirs.
Steps should be taken to bring within the provisions of the mandatory purchase requirement the estimated 40% of new mortgages that are not federally regulated, such as those obtained through state banks.

Compliance with the National Flood Insurance Reform Act’s provisions for insurance purchase should be more closely monitored (e.g., after the loan’s first year and when transferred to another lender), and stronger penalties put in place for non-compliance.

Stronger language should be included in the regulations to require that, whenever there is a change in zone due to a new Flood Insurance Rate Map becoming effective, the regulations apply immediately and the lender does not have to be informed nor wait for borrowers to make, increase, renew, or extend their loans.

Part of FEMA’s outreach/marketing program should be targeted at property owners who live in high-risk areas but do not have mortgages, and therefore have not been required to purchase flood insurance.

Agent Training
After Hurricane Isabel hit the East Coast and states like Maryland and Virginia experienced a level of flooding they had not experienced for many years, the finger of fault for lack of flood insurance or adequate coverage for so many damaged homes was quickly pointed at the insurance agents. This event illuminated the need for insurance agents to be more fully trained, so that Congress added a provision to the Flood Insurance Reform Act of 2004. Unfortunately, FEMA was slow in implementing the Act’s requirements. One challenge has been that the licensing and education requirements for insurance agents (like the insurance industry in general) are regulated by the states, not the federal government. Consequently, FEMA simply issued a sample agenda of what should be covered in an agent training seminar. This is not enough.

- FEMA, through its contractor who runs the Bureau & Statistical Agent, should update both its instructor-led training and web-based training to include sections on how floodplain management, map modernization, and mitigation can affect insurance. In addition, approval should be sought for awarding Continuing Education Credits for the web-based training in states where this is approved.

- FEMA should work more closely with state departments of insurance, NFIP State Coordinators, and state insurance legislators to promote the training of insurance agents as well as encourage each state to require a minimum number of hours of Continuing Education Credits from flood insurance training in order for agents to obtain and renew their property and casualty license. This initiative should be underway by the end of 2007.

- FEMA should expand its efforts to increase agents’ and adjusters’ understanding of the availability and function of Increased Cost of Compliance coverage and of the repetitive loss issues.
Outreach
With the advent of the Flood Map Modernization initiative, the catapulting of levees and their residual risk into media headlines, and the disastrous 2004 and 2005 hurricane seasons, the need to inform property owners and renters about their flood risk and to encourage the purchase of flood insurance is needed now, more than ever. Even with FEMA’s ongoing marketing campaigns of the last decade, and the accompanying growth in new policies and renewals, an estimated 50% of homes in high-risk areas are still unprotected. With the modernization of flood maps, more properties are likely to be added to the higher risk zones each month. Added to this is the newly visible residual risk faced by people living behind levees and other flood reduction structures. All this demands a stronger effort in public awareness outreach, from the national down to the local levels.

- Additional funding needs to be appropriated for the NFIP, the Corps, and other federal agencies for their outreach efforts to not only explain flood risk to the public but also drive them to purchase a policy. Funding for this type of outreach also should be provided to help communities whose maps are being changed as well as those with levees.

- FEMA’s flood insurance marketing campaigns should continue, with a focus on both new purchases and renewals.

- Flood insurance outreach needs to be continually strengthened among FEMA and state departments of insurance, NFIP State Coordinators, State Insurance Legislators, etc., with special emphasis on enforcing the NFIP requirement to identify and insure (through the NFIP or through self-insurance) state-owned insurable structures.