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# Evaluation of the National Flood Insurance Program Recommendations from the Individual Reports

Compiled and Edited by  
Nina Aggarwal

American Institutes for Research

December 2006

# **Evaluation of the National Flood Insurance Program**

## **Recommendations from the Individual Reports**

Prepared as part of the 2001–2006  
Evaluation of the National Flood Insurance Program

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## REPORTS IN THE EVALUATION OF THE NATIONAL FLOOD INSURANCE PROGRAM

This Evaluation is composed of a series of reports assessing questions identified and prioritized by a steering committee about the National Flood Insurance Program. The reports of the Evaluation will be posted on the FEMA website as they are finalized. The website URL is <http://www.fema.gov/business/nfip/nfipeval.shtm>. The reports in the Evaluation are:

*The Evaluation of the National Flood Insurance Program—Final Report*  
American Institutes for Research and NFIP Evaluation Working Group

*Assessing the Adequacy of the National Flood Insurance Program's 1 Percent Flood Standard.* Galloway, Baecher, Plasencia, Coulton, Louthain, and Bagha, Water Policy Collaborative, University of Maryland.

*Costs and Consequences of Flooding and the Impact of the National Flood Insurance Program.* Sarmiento and Miller, Pacific Institute of Research and Evaluation.

*Developmental and Environmental Impacts of the National Flood Insurance Program: A Review of Literature.* Rosenbaum, American Institutes for Research.

*The Developmental and Environmental Impact of the National Flood Insurance Program: A Summary Research Report.* Rosenbaum and Boulware, American Institutes for Research.

*An Evaluation of Compliance with the National Flood Insurance Program Part A: Achieving Community Compliance.* Monday, Grill, Esformes, Eng, Kinney, and Shapiro, American Institutes for Research.

*An Evaluation of Compliance with the National Flood Insurance Program Part B: Are Minimum Building Requirements Being Met?* Mathis and Nicholson, Dewberry.

*Evaluation of the National Flood Insurance Program's Building Standards.* Jones, Coulbourne, Marshall, and Rogers, Christopher Jones and Associates.

*Managing Future Development Conditions in the National Flood Insurance Program.* Blais, Nguyen, Tate, Dogan, and Petrow, ABSG Consulting; and Mifflin and Jones.

*The National Flood Insurance Program's Mandatory Purchase Requirement: Policies, Processes and Stakeholders.* Tobin and Calfee, American Institutes for Research.

*The National Flood Insurance Program's Market Penetration Rate: Estimates and Policy Implications.* Dixon, Clancy, Seabury, and Overton, RAND Corporation.

*Performance Assessment and Evaluation Measures for Periodic Use by the National Flood Insurance Program.* Miller, Langston, and Nelkin, Pacific Institute of Research and Evaluation.

*The Role of Actuarial Soundness in the National Flood Insurance Program.* Bingham, Charron, Kirschner, Messick, and Sabade, Deloitte Consulting.

*State Roles and Responsibilities in the National Flood Insurance Program.* Mittler, Morgan, Shapiro, and Grill, American Institutes for Research.

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## 1. EDITOR'S NOTES

This document is a compilation of recommendations from all the reports in the 2001–2006 Evaluation of the National Flood Insurance Program. Each of the thirteen reports had a unique scope of work, some of which were more oriented towards recommendations than others. Although all of the report recommendations presented here have been edited for greater clarity and consistency, it remains clear that each report has a different style, and each author or group of authors speaks with a different voice. The format used to display the recommendations has been reformatted from the original reports for greater uniformity and coherence; the main points appear in *bold italics*.

The recommendations from each individual report are presented here with little or no context. Each recommendation was numbered to identify the source report and distinguish it from other recommendations. Please refer to the original reports for further information on and the basis of the recommendations. The recommendations are referenced by the original section headings for ease in doing so.

A list of acronyms has been attached at the end of the report for the reader's convenience.

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## 2. RECOMMENDATIONS FROM REPORTS IN THE EVALUATION OF THE NATIONAL FLOOD INSURANCE PROGRAM

### 2.1 *Assessing the Adequacy of the National Flood Insurance Program's 1 Percent Flood Standard.* Galloway, et al.

#### 13.4 Recommendations

The NFIP [National Flood Insurance Program] is an important tool in the battle against flood losses and disruption of the lives of those who live and work in floodplains. The standards established for regulation of land use and for mandatory purchase of flood insurance help define the effectiveness of the NFIP. As indicated earlier, there are problems with the use of the 1 percent standard to control land use, designate areas where insurance should be required, establish an accreditation level for levee protection, define safe areas for critical facilities, and assist in the protection and enhancement of the natural and beneficial functions of floodplains. The WPC [Water Policy Collaborative] recommends that:

- **1%-1.** *If implementation of the standard can be improved, FEMA [Federal Emergency Management Agency] should retain the 1 percent annual chance flood as the federal standard for regulation of activity in the SFHA [Special Flood Hazard Area].* The nation needs to have a common standard for Federally imposed land use restrictions.
- **1%-2.** *FEMA should take action to improve the implementation of the 1 percent standard for regulation of land use.* Such actions as enhancement of public understanding of hazards, use of future-conditions hydrology to account for urbanization and climate change, reduction in floodway infringements, and greater attention to enforcement of existing NFIP provisions would greatly improve the effectiveness of NFIP related land use decisions.
- **1%-3.** *States and their communities should exercise their responsibility to impose higher standards, where the health and safety of the population merits a higher standard for land use regulation. Concurrently, FEMA should examine the use of incentives to reward States that exercise these responsibilities.* Imposition of higher standards is well within the purview of the States and the communities that lie within the States and receive their land use authority from the States.
- **1%-4.** *FEMA should seek legislative authority to require mandatory purchase of flood insurance by those living in the 0.2 percent floodplain if they hold a federally insured mortgage or if they are to receive any disaster assistance from the federal government in the case of a flood.* The cost of this insurance should be determined actuarially, based on the reduced risk of living at a specific elevation within the 0.2 percent floodplain.
- **1%-5.** *FEMA should not recognize levees under the NFIP unless they provide protection to the 0.2 percent (500-year flood) level.* Levees in non urban areas should protect against the 1 percent or larger flood, depending on the economic costs and benefits of the levee.

- ***1%–6. FEMA should seek legislative authority to require mandatory purchase of flood insurance by those living behind accredited levees to address the residual risks they face and to ensure they are aware of this risk.*** Structures behind levees are subject to residual risks and should be insured against that risk.
- ***1%–7. FEMA should ensure that NFIP guidance and program activities clearly indicate that critical facilities should be located outside the 0.2 percent floodplain.***
- ***1%–8. FEMA should improve the collection of policy and claims data, to assist in ongoing evaluation efforts, and should actively support Federal funding of efforts by NOAA [National Oceanic and Atmospheric Association] to upgrade precipitation frequency estimates and flood data collection, and the U.S. Geological Survey (USGS) efforts to upgrade its stream gauging program. The accuracy of the Federal flood data is no better than the baseline information from which it is derived.***
- ***1%–9. FEMA should ensure that consideration of natural and beneficial functions is fully integrated into all aspects of FEMA and NFIP actions influencing floodplain activity.***

### **13.5 A Final Comment—Communicating the Risk**

As discussed in Chapter 3, use of the 1 percent terminology to describe the national standard appears to be of marginal utility. The 1 percent terminology is understood but not necessarily supported by the floodplain management community. It is certainly not in more common use by government officials, the media, or the public, and nearly two decades of work to enshrine the terminology has had little success. If the risk is going to be communicated more effectively, something needs to be done.

- ***1%–10. The WPC team believes that FEMA should undertake a thorough analysis of the use of the percentage chance of occurrence as the basis for expressing the national standard for the NFIP to determine if a more effective approach can be developed. Until such time that a risk communication strategy is developed and accepted, FEMA should consider returning to the 100-year terminology for public communications.***

## ***2.2 The Role of Actuarial Soundness in the National Flood Insurance Program.*** **Bingham, et al.**

### **9. RECOMMENDATIONS AND CONCLUSIONS**

We believe the NFIP has several options available for moving the program towards actuarial soundness. A number of these options were discussed on October 18, 2005, in front of the U.S Senate Committee on Banking, Housing, and Urban Affairs hearing focused on the future of the NFIP. Eight witnesses shared their testimony and ideas for addressing issues facing the NFIP. The topics included addressing repetitive loss properties, expanding purchase of coverage beyond SFHAs (e.g., 1-in-250 or 1-in-500 flood plains), participation rates, “charity” hazard, increasing lender compliance, expansion of compliance to non-Federally regulated lenders, map quality and digital standards, FEMA staffing and resources, tougher building standards, Increased Cost of Compliance, oversight of WYO [Write Your Own NFIP Policies] companies, reduction or elimination of all subsidies, elimination of specific subsidies (e.g., vacation homes, rental properties, etc.), research specific to manufactured homes, elimination or modification of LOMR-F [Letter of Map Revision based on Fill], and better funding of map modernization.

Although not specifically addressed in the testimony, subsidies on Pre-FIRM [Flood Insurance Rate Map] properties and grandfathered properties could be addressed using some of the following phase out strategies:

- Uniform stair-step phase out (e.g., 5-year, 10-year, etc.) or 10-year (i.e., 10 percent of the way to the actuarial rate in year 1, 10 percent in year 2, etc.)
- Staggered stair-step phase out (e.g., 5-year, 10-year, etc.) or 10-year odd (i.e., 20 percent in year 1, 20 percent in year 3, etc.)
- Ramped phase out (e.g., 5-year, 10-year, etc.) or 10-year (e.g., 1/55 in year 1, 2/55 in year 2, etc. where  $55=1+2+\dots+10$ )
- Immediate phase out.

No matter which strategy is used, the above options for addressing subsidized rates have advantages and disadvantages. For example, the NFIP could immediately phase out all pre-FIRM properties to actuarially sound rates. The advantage of this approach would be the ease of administration, simple explanation of approach to policyholders (i.e., no phase-in over multiple years), ease of communication to agents, and immediate achievement of actuarially sound rates. The disadvantages of this approach would be the potential exodus of policyholders unwilling or unable to pay actuarially sound rates, negative reaction of policyholders, impact on pre-FIRM property values, effort required to obtain elevation certificates for actuarial rating and immediate economic impact on states and local communities.

The NFIP could also convert all pre-FIRM properties to actuarially sound rates over a multi-year period (e.g., 5, 10, 15, 20, etc.) using the uniform, staggered or ramped phase-in

methods. The main advantage of these approaches would be in allowing pre-FIRM policyholders time to adjust their annual budgets to the rising cost of flood insurance. Another advantage of these approaches would be the achievement of actuarially sound rates at a rate faster than natural attrition. The disadvantage of these approaches would be the administrative challenges of phasing out pre-FIRM rates (e.g., systems, policy forms, agent training), communication of phase-in methods, potential exit of policyholders unwilling or unable to pay actuarially sound rates, impact on pre-FIRM property values and long term economic impact on states and local communities.

The NFIP could also maintain the status quo and wait for the natural attrition of pre-FIRM properties. The advantages of this approach would be continuing “business as usual” and minimal disruption to NFIP stakeholders. The disadvantage of this approach would be the slow rate of progress towards achieving actuarial soundness for pre-FIRM properties.

The important difference between pre-FIRM and administratively grandfathered properties is the fact that the number of administratively grandfathered properties will continue to grow as FIRMs are revised. This difference allows the NFIP to address the problem for current grandfathered properties only, for future grandfathered properties only, or for both current and future grandfathered properties. As the map modernization effort completes, the importance of addressing grandfathered properties will increase significantly.

The NFIP has been addressing repetitive loss properties for some time. With the passage of FIRA04 [Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004], it might be prudent to observe how the mitigation efforts of severe repetitive loss properties progress over the next few years before considering any alternative repetitive loss property options.

Regarding the NFIP’s current pricing approach, which charges actuarial rates to post-FIRM policies and uses the historical average loss year as a benchmark for determining the subsidy level for subsidized Pre-FIRM policies, it is important to note that the program eventually could approach the long-term expected annual losses. However, waiting for pre-FIRM properties to decline and for the program’s historical loss history to reflect enough catastrophic losses like hurricane Katrina is a slow process. Without the elimination of the current subsidies, it would be hard for the program to approach the long-term expected annual loss level without charging post-FIRM policyholders higher than actuarially indicated rates.

Given the contradictory effects of actuarial soundness on the NFIP’s primary legislated goals, actuarial soundness cannot simultaneously be a primary overriding goal of the NFIP. Given this contradiction, the fact that implementing rate increases cannot address all of the NFIP’s challenges, and the realization that some higher risk properties may never reach true actuarial pricing,

- ***AS-1. FEMA should continue to follow a policy of pursuing actuarial soundness as best as possible contingent on not undermining other primary goals included in the NFIP’s legislation. Actuarial soundness should remain a long-term focus of the program, and the recommendations provided here can move the program closer to that goal.***

However, it appears that given the NFIP's current financial position since Hurricane Katrina and given the volatility of flood-related losses, pursuing actuarial soundness as a primary goal could undermine other goals and increase net costs to society. As long as the program continues to attract new policyholders, encourage floodplain management and mitigate repetitive loss properties, the service that the NFIP provides to its policyholders and U.S. taxpayers outweighs strict adherence to the goal of actuarial soundness.

- ***AS-2. Our primary recommendation would be for FEMA to focus its short-term efforts on refining the NFIP's data collection process to ensure that the program captures all the necessary information in order to evaluate properly the program's actuarial soundness.***

Any efforts focusing on the issue of subsidies should also address administratively grandfathered properties since the NFIP lacks the ability to track the expected growth in these policies as the map modernization effort continues. It would be better to address the subsidy now rather than wait for the number of grandfathered policyholders to increase before the next major flood disaster occurs.

- ***AS-3. FEMA should also review their use of the historical average loss year as a benchmark for determining the subsidy level for subsidized policies.***

The historical average loss year is based on the historical experience of the program since 1978. Since that time, only 2005 experienced flooding losses that would have historically been classified by the NFIP as "catastrophic" (e.g., \$9 billion in claims losses). In addition, many years in the 1980s were characterized by lower levels of loss activity. Therefore, the historical average loss year involves less losses from claims than the expected annual claims losses in future years. As a result, collecting premiums to meet the historical average loss year does not reflect the collections that would be necessary to build reserves for potential catastrophic years in the future. However, we recognize that the historical average loss year was selected for its ease of calculation and that introducing adjustments for items such as global weather patterns and erosion would likely make the rate setting process more difficult to understand and harder to justify. Any review of the historical average loss year must consider the history behind its derivation and the consequences of changing the approach from both an actuarial and non-actuarial perspective.

The following recommendations were discussed in Section 7 through Section 9 of this report.

- ***AS-4. We recommend that the NFIP continue to educate flood insurance consumers on the importance of buying flood insurance using comprehensive marketing and advertising campaign such as FloodSmart.***
- ***AS-5. We recommend that the NFIP continue to address aggressively repetitive loss properties (e.g., FIRA04) by addressing the program's worst offenders.***
- ***AS-6. We recommend that the NFIP continue to monitor the success of the map modernization effort.***

- ***AS-7. We recommend that the NFIP investigate what would be involved in collecting erosion information for future analysis.*** This might be an area where the Congress could consider funding a major effort to understand the erosion risk faced by the NFIP over the next 50 years.
- ***AS-8. We recommend that FEMA study the growing influence of subsidies on administratively grandfathered properties.*** Further research topics could include the review of mandatory purchase requirements, focus on lender compliance, and other changes aimed at NFIP coverage limits and options.
- ***AS-9. We recommend that FEMA research whether some best practices modeling techniques from other property and casualty lines could be applied to the flood line, including, rate-making methods, probabilistic models, granularity, impact of geographic concentration and the impact of storm surge.***
- ***AS-10. We recommend that FEMA research whether NFIP coverages and coverage limits should be expanded, including would there be feasibility and a market from NFIP customers for additional living expenses and business interruption coverages, and increased and/or indexed coverage limits.***

## ***2.3 Costs and Consequences of Flooding and the Impact of the National Flood Insurance Program. Sarmiento and Miller.***

### **9. CONCLUSIONS AND RECOMMENDATIONS**

This study confirms that the insurance and floodplain management elements of the NFIP reduce costs to government and individuals and prevent uncompensated losses. It shows that the NFIP does not provide a strong economic incentive to develop in the floodplain. More importantly, its subsidy for older residences below BFE [Base Flood Elevation (1-percent-annual-chance) flood] probably discourages redevelopment of the residences most at risk of flood losses.

The HAZUS [HAZUS-MH Flood Model] simulations show that the NFIP mitigation requirements prevent substantial costs to households and government in the aggregate. The study is limited in that on the one hand it did not evaluate the costs of mitigation in housing construction, but on the other hand it also did not include the considerable social and non-economic costs of floods and disrupted lives, exposed clearly in the wake of the 2005 flood events. Other research confirms the strong value of mitigation projects generally, showing mitigation costs will be less than the flood losses that HAZUS suggests will be averted.

NFIP insurance coverage modestly reduces costs to government and considerably reduces uncompensated flood losses to individuals. These findings emphasize the desirability of high insurance penetration within the SFHA. In addition, the average value of the reduction in uncompensated losses associated with insurance coverage adds so little to property values that it seems implausible that the NFIP creates considerable development pressure. The subsidy of pre-FIRM properties through discounted insurance premiums, however, is likely to have slowed rebuilding of this housing stock above BFE. Rebuilding would yield significant mitigation cost savings from the government's perspective.

Flooding affects communities more broadly than HAZUS is able to measure. Flood impacts not captured in HAZUS include that bond ratings fall, raising the cost of municipal borrowing, employment declines for one year, municipal spending declines, and municipal debt rises. Further, our study and HAZUS both "ignore impacts on people including lives lost and people displaced, family trauma and social disruption, loss of items like family photos that cannot be replaced, business interruptions, disruption of government services, tourism reductions, and shortages of critical human services. Indirect environmental costs also can arise, e.g., the costs if a sewer line breaks polluting a bay, or the loss of an erosion-buffering beach or wetland that may alter the future vulnerability of the community." (David et al. 1999). Thus, HAZUS analyzes only the most readily measurable subset of the total costs of flooding. The costliest part of this study was design and model building.

- ***CC-1. Follow-up research building on the existing design would be relatively inexpensive and should be undertaken. When the 2010 Census is released, its structure inventory should be loaded into HAZUS, along with other updates, and our analysis should be updated.*** The update should reassess the annual cost savings resulting from flood insurance

and related mitigation efforts, savings to government, and the impact on development costs in the SFHA.

- ***CC-2. We also recommend experimenting with a further set of HAZUS estimates that it may be appropriate to run annually in order to better document and publicize the savings to society and to government that result from NFIP-induced mitigation and from flood insurance sales.*** These estimates would cover all floods that were declared as disasters, plus any other floods above a selected size or damage threshold that were not confined to sparsely populated areas.
- ***CC-3. It also would be desirable to look more deeply at a sample of flooded communities in order to explore the nature of the employment and government expenditure shifts that occur.*** Average shift size and duration tell only part of the story. Case studies probing the full range of flood-related costs and consequences for floods of different frequencies also would be informative.

***2.4 Developmental and Environmental Impacts of the National Flood Insurance Program: A Review of Literature. Rosenbaum and Boulware.***

This report does not contain any recommendations.

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## ***2.5 The Developmental and Environmental Impacts of the National Flood Insurance Program: A Summary Research Report. Rosenbaum and Boulware.***

### **8.7 Recommendations**

#### **8.7.1 FEMA's Implementation of NEPA and EO 11988 Through the NFIP**

##### **Highest Priority**

- ***ES-1. FEMA should initiate a new programmatic NEPA and EO 11988 reviews of the NFIP's present floodplain regulations within which specific issues identified in the report could be incorporated.*** Among the findings pointing to the desirability of such a comprehensive review are (1) papers proposing improvements in the 1-Percent Standard and the "no-rise" regulatory requirement for floodplain mapping presented at the 2004 ASFPM [Association of State Floodplain Managers] Foundation's Gilbert F. White National Flood Policy Forum (ASPFM 2004); (2) the lack quantitative data concerning the natural and beneficial value of floodplains; (3) the need to characterize the cumulative national and local impact of floodplain filling through the LOMC [Letter of Map Change] process; (4) the absence of research specifically concerned with the NFIP's impact on endangered species habitat; (5) the possibility for greater use of future-conditions hydrology as a basis for floodplain mapping; and (6) continuing professional discourse concerning the actuarial soundness of NFIP premiums.
- ***ES-3. FEMA should utilize or develop, quantitative methodologies for assessing the natural and beneficial function of floodplains, which can be provided to state and local officials as a tool for assessing the impact of flood mapping and floodplain regulatory decisions.***
- ***ES-4. Evaluate the methodology used to calculate and map the 1 percent standard to determine if there are ways to provide increased protection to the natural and beneficial functions of floodplains based on recent research suggesting that the biological functions and natural boundary of floodplains may not be adequately addressed in the current methodology.***
- ***ES-5. When assessing the methodology used to calculate the 1-percent standard, priorities should include: (a) revising relevant FEMA regulations and CRS [Community Rating System] standards to encourage use of future conditions hydrology, when practicable, as a methodology; and (b) using the upper limit of a 95-5 or 90-10 confidence interval in calculating the BFE.***
- ***ES-6. Replace the present regulatory floodway standard with one based on either a 10-year floodplain or the regulatory floodway, whichever is greater.***
- ***ES-7. Eliminate the 1-foot rise allowed in determination of an SFHA floodway and delineate a "resource-based" floodway, with consideration for ecological and geomorphic process, to protect better floodplain functions.***

- *ES-11. Restructure the LOMC review process to encourage more local involvement and interagency input, especially from resource management agencies familiar with the unique local and beneficial functions of floodplains.*
- *ES-12. Initiate a nationwide evaluation of the impact of the LOMC process on the natural and beneficial values of floodplains with a priority component focused on the floodplain impact of the LOMR–C[Letter of Map Revision-Conditional] process.*

### Highly Desirable

- *ES-2. FEMA should commission an empirical, national study comparing the developmental and environmental impacts of the NFIP in riverine and coastal areas.*
- *ES-8. Modify FEMA cost-benefit procedures used in mitigation projects to include consideration of the long-term environmental and economic services created or preserved in floodplains through non-structural mitigation techniques.* Documentation [of] the value of ecosystem services protected by sound floodplain management practices may better justify the protection of floodplain natural and beneficial functions to NFIP communities and the public in general.”
- *ES-9. Given the nationwide trend in urbanization and higher peak flows, a true 1 percent floodplain is likely larger than a mapped effective floodplain. The LOMC standards and guidance should acknowledge this condition and at least give equal considerations to map revision requests that raise or lower BFEs, or scrutinize in more detail requests that lower floodplains in the face of continued development, loss of floodplain habitat and increasing flood damages.*
- *ES-13. The signatory requirement for a Community Acknowledgment Form should be broadened to include the signature of someone familiar with the environmental effects of the floodplain fill request, such as a community natural resource manager, in order to address more directly the effects of floodplain fill on floodplain functions.*

### 8.7.2 Perceptions of Flood Risk and NFIP Availability

#### Highest Priority

- *ES-14. FEMA should initiate a comparative study of cost and demand elasticity for NFIP insurance in riverine and coastal communities, between pre- and post-FIRM structures, and among different premium bases to determine the extent to which NFIP premium increases are sensitive to these specific social and geographic settings.*

### Highly Desirable

- *ES-15. Evaluate the familiarity of community flood plain managers, zoning administrators, and other local land use regulators with local CBRS areas and determine if federal regulations are being enforced regarding development in these CBRS units.*

### 8.7.3 The Community Rating System and Floodplain Conservation

#### High Priority

- *ES-10. Examine the feasibility of adding to the Community Rating System standards, additional credit for No Adverse Impact as a community floodplain management strategy.*
- *ES-16. Initiate a nationally-based survey of CRS communities to evaluate the impact of CRS-credited activities intended to promote natural and beneficial floodplain values: CRS categories 330, 420, 430, 450, and 510.*
- *ES-20. Focus more attention on CRS education and training for local political officials whose support is needed for an effective program.*
- *ES-22. FEMA should amend its regulations implementing NEPA and EO 11988 (40 CFR [Code of Federal Regulations], Parts 9 & 10) to require environmental reviews in the future for new CRS standards and specific community activities for which CRS credit is given.*

#### Highly Desirable

- *ES-17. Encourage communities with limited staff resources to work together with adjacent communities that may already be in the CRS or are willing to share resources.* For example, sharing the same CRS Coordinator has been successful in the past.
- *ES-18. Promote more collaboration between small communities and counties to use existing resources to create credible CRS activities.* For example, counties may already send outreach materials to all citizens in the county, including those in incorporated NFIP communities within the county. This outreach project could be creditable under CRS for the county and for all communities within the county
- *ES-19. Update solicitation lists used to recruit local professionals to attend CRS regional training sessions.* Updating these lists and making them available to the communities would be beneficial for all concerned
- *ES-21. Improve coordination with FEMA's Flood Mitigation Assistance Program, Hazard Mitigation Grant Program, and Pre-disaster Mitigation, which can all be used to further CRS efforts.* The CRS and those programs should be seen as complimentary to improve floodplain management activities and issues.

#### 8.7.4 NFIP and the Endangered Species Act

##### High Priority

- *ES-23. FEMA should use a NEPA and/or EO 11988 review of its NFIP regulations and CRS standards as an opportunity to initiate a national study of the NFIP's impact on endangered species and its relevance to the ESA [Endangered Species Act of 1973].*

#### 8.7.5 The Coastal Barrier Resource System

##### High Priority

- *ES-24. At the time appropriate data is available from the USFWS Digital Mapping Pilot Project, FEMA should initiate a study of development rates, the reasons for such development, and the incidence of NFIP policies in the sample of CBRS units included in the Project. If possible, these units should be those in the GAO's "Coastal Barriers: Development Occurring Despite Prohibitions Against Federal Assistance" (1992).*

## **2.6 An Evaluation of Compliance with the National Flood Insurance Program Part A: Achieving Community Compliance. Monday, et al.**

### **9.1 Major Recommendations**

This evaluation has concluded that *there are three main actions through which FEMA is most likely to improve community compliance.*

#### **9.1.1 Increase Community Assistance Visits**

FEMA should continue community assistance work to promote, monitor, and enforce compliance, particularly the conduct of CAVs. However, *it is critical that some means be found to increase the number and frequency of community visits.* At present, FEMA's goal as stated in the CAV/CAC manual is that each NFIP community receives some sort of one-on-one contact with the state or FEMA every five years. Data indicate, however, that the rate of such contact is only about once in 10 years, and only half of those contacts include a community visit. This is not a sufficient level of FEMA or state presence to maintain the level of monitoring necessary to avert compliance problems.

#### **9.1.2 Revitalize the CIS [Community Information System]**

FEMA has in the Community Information System a potentially powerful tool for monitoring compliance nationwide. The database also can enable FEMA and other entities to obtain a comprehensive picture of nationwide compliance. Although it cannot answer every question, the data stored there, if accurate and up-to-date, would enable quantitative assessments to be made of numbers of communities monitored in a given year; how many are noncompliant (have open CAVs with serious violations), how long the CAVs remain open; which communities have had staff turnover, and similar questions. That is an essential starting point for more in-depth analysis of both the optimal level of compliance and the level being achieved. This solid core of data is essential to knowing whether progress is being made in compliance, whatever the reason.

Overcoming technological obstacles to widespread access and use of the CIS occupied FEMA for several years and inhibited the ability to make and disseminate improvements in the system's use for monitoring compliance (and other purposes). With the full implementation of the web-based system in 2004 and subsequent enhancements accomplished, *FEMA should move forward to remedy the remaining deficiencies by designing a more usable query function and filling the backlog of unentered community assistance data. It is also essential to simultaneously rehabilitate the CIS's image among regional office and state floodplain management staff* in order to assure that they enter records conscientiously and begin to trust the data they can access through CIS.

### 9.1.3 Impose Probation More Readily

The NFIP community compliance model is weighted toward using a cooperative approach that entails large amounts of technical assistance services, and uses enforcement mechanisms, such as the sanctions of probation and suspension, only sparingly. As noted in this study, this is an appropriate approach for a governmental program with the characteristics and constraints of the NFIP. However, it has also been demonstrated that a minority of communities are not likely to respond to this approach and for those a credible threat of penalty is needed. The NFIP has a sanction available for this purpose in the form of probation, but it is used so infrequently that there has developed a widespread perception that it is unlikely to be imposed in any given situation. This perception deprives the threat of its credibility and thus keeps recalcitrant communities unresponsive. Further, FEMA regional office and state staff themselves have grown to believe that they will never be able to succeed in having probation imposed on a noncompliant community, and their frustration is detrimental to an effective community compliance initiative. ***FEMA should make an effort to act with deliberation on existing or future recommendations for probation action, with an eye toward re-establishing the credibility of this sanction.***

### 9.1.4 Miscellaneous

If FEMA maintains its present position that technical assistance and training are the best ways to achieve compliance, it should be able to document why that is so, or at least document that positive impacts are being realized from the resources devoted to technical assistance. This will require enhancing use of the CIS, as noted above, and also the addition of a system for tracking the provision of training to floodplain management staff at all levels and incorporating that into the CIS. FEMA should develop a comprehensive method of measuring the effect of training and technical assistance on community compliance.

It is not clear whether the level of noncompliance among Community Rating System communities is higher or lower than that of the rest of the NFIP participants (since rates for the whole NFIP cannot be determined) but noncompliant CRS communities do draw a disproportionate amount of attention from the profession, the public, and Congress.

- ***CA-28. FEMA should devote attention to remedying the both the noncompliance and the perception of noncompliance among the CRS communities.***
- ***CA-29. Consideration should be given to conducting an investigation of state compliance with the NFIP criteria.*** Several regional and state officials stated that they did not know whether the development activities of state agencies were in compliance with NFIP regulations.

## 9.2 Specific Recommendations

Listed below are specific recommendations that were presented and discussed more thoroughly in the body of the report. They are grouped by subject matter.

### 9.2.1 Recommendations on FEMA and State Responsibilities

- *CA–1. Additional funding should be provided to FEMA to increase the number of FEMA headquarters and regional office staff assigned to compliance work.*
- *CA–2. The practice of assigning NFIP staff to non-NFIP work should be re-examined.*
- *CA–3. FEMA should increase the CAP-SSSE [Community Assistance Program—State Support Services Element] funding for compliance work by the states and clarify the criteria being used for funding allocations.*
- *CA–4. FEMA should hold states accountable for non-completion of compliance work funded under the CAP-SSSE.*

### 9.2.2 Recommendations for Promoting Compliance

- *CA–5. FEMA should update its two general guidance documents for community assistance and community compliance.*
- *CA–6. The indicators of communities’ needs for technical assistance should be tracked more closely.*
- *CA–7. FEMA and the states should continue to use the CAP-SSSE funding to deliver training to community staff.*
- *CA–8. FEMA should continue its support of training for local staff, state training requirements, certification of local floodplain managers, and the formation of state and local professional associations.*
- *CA–9. FEMA should require all regional compliance staff to attend standardized NFIP training and develop training for them in monitoring and enforcement procedures.*
- *CA–10. State and FEMA regional staff should meet routinely to share “best practices.”*
- *CA–11. States should consider requiring professional certification of their local floodplain management officials.*
- *CA–12. The effect of training and technical assistance on community compliance should be measured.*
- *CA–13. FEMA should issue additional guidance on and publicize the availability of ICC [Increased Cost of Compliance] coverage.*

### 9.2.3 Recommendations for Monitoring

- *CA-14. FEMA should clarify its goal for the frequency of contact with every community and specify its applicability to CRS communities.*
- *CA-15. More resources (funding and staff) should be found to increase the number of CAVs [Community Assistance Visit] (and CACs [Community Assistance Contact]) conducted by the states and by FEMA regional staff.*
- *CA-16. FEMA should bring the CIS closer to realizing its potential as a monitoring tool by: eliminating the backlog of incomplete records within CIS; periodically checking the accuracy and completeness of CIS record; updating and clarifying guidance on entering information in CIS; making entry of CAV report data into the CIS a prescribed and funded task for states under the CAP-SSSE; adding to the list of data routinely entered into the CIS (1) information on turnover of local staff; (2) tracking information for submit-for-rate applications; improving the flexibility of the CIS reporting tool; and rehabilitating the image and reputation of the CIS among users and potential users.*
- *CA-17. FEMA should clarify the submit-for-rate reporting form.*
- *CA-18. FEMA should establish a tracking system for submit-for-rates and issue updated guidance on how submit-for-rate data should be used for monitoring.*

### 9.2.4 Recommendations for Enforcement

- *CA-19. FEMA should issue and/or clarify some of its guidance on enforcement: the types and quantity of documentation required for probation and suspension of communities for failure to enforce their ordinances; and the meaning and implications of “full extent of legal authority.”*
- *CA-20. The process of providing technical assistance to noncompliant communities should be finite and well documented.*
- *CA-21. Consideration should be given to imposing a time limit for correcting program deficiencies and remedying violations.*
- *CA-22. Consideration should be given to raising the probation surcharge.*
- *CA-23. Consideration should be given to using informational and automated methods to increase pressure on communities that are not making sufficient progress toward compliance.*
- *CA-24. FEMA should apply probation more frequently and publicize its use among floodplain management professionals.*

### 9.2.5 Recommendations on Special Compliance Issues

- *CA-25. FEMA could improve implementation of the substantial damage/improvement requirement through the following means: provide more training and guidance on substantial damage/improvement to local staff; provide communities with the Residential Substantial Damage Estimator software and train them to use it; promote awareness of the ICC coverage, to help diminish the financial impact of required mitigation measures; after a flood, provide and encourage support for local determinations of substantial damage with staff from FEMA, states, outside experts, and cooperative agreements among communities; clarify the procedures for sharing lists of potentially substantially damaged structures after a flood; visit communities during recovery from any type of disaster to ensure that the substantial damage/improvement requirement is implemented; continue to encourage communities to adopt a lower threshold for substantial damage or a cumulative qualifier provision; and, continue efforts to narrow the range of methods acceptable for calculating substantial damage/improvement. Consideration should be given to raising the probation surcharge.*
- *CA-26. FEMA should issue additional guidance to regional offices and communities, to correct misperceptions and misunderstanding about the acceptable use of variances.*
- *CA-27. The following actions by FEMA would help confirm and document that CRS communities are compliant with the minimum NFIP standards: improve recordkeeping and communication about CRS communities among FEMA headquarters, regional offices, the states, and ISO [Insurance Services Office]; clarify the roles and responsibilities of ISO and regional office staff for monitoring compliance with NFIP standards; standardize the procedure for certifying NFIP compliance upon application to the CRS, and require that NFIP compliance be certified by the FEMA regional office before a CRS community is upgraded; clarify the schedule for routine monitoring of CRS communities.*

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## ***2.7 An Evaluation of Compliance with the National Flood Insurance Program Part B: Are Minimum Building Requirements Being Met? Mathis and Nicholson.***

### **6. Recommendations**

The \$1.1 billion in estimated flood damages prevented annually due to reduced frequency and severity of losses resulting from enforcement of floodplain management regulations provides testament to the successful implementation of many of the NFIP's floodplain management measures. However, the data gathered through this study point to the need for greater focus on enforcement and additional training and technical guidance in several areas. In addition, this study identified widespread problems with community record keeping related to construction of buildings in the nation's SFHAs.

Recommendations for improving the specific deficiencies identified through Part B of the Evaluation of Community Compliance follow. These recommendations include specific actions that communities can take to improve compliance as well as actions FEMA and its state partners can take to promote improved compliance.

- ***CB-1. Adoption of freeboard should be strongly promoted. The prevalence of lowest floor (Zone AE) and LHSM [Lowest Horizontal Structural Members] (Zone VE) violations, and noncompliant buildings found to be within 6 inches of the BFE, reinforces the advisability of communities or states adding a requirement for freeboard rather than meeting the minimum requirement that the top of the floor be built at BFE.***

Freeboard is the additional height requirement above the BFE that provides a factor of safety against flooding and wave run-up. Freeboard compensates for the many unknown or not easily measured factors that could contribute to increased flood heights, such as wave action, obstructed culverts or bridges, and the effects of urbanization. It reduces the risk of flood damage, helping account for the one-foot rise in flood levels allowed by the NFIP floodway standard and reduced floodplain storage due to development. It also reflects the uncertainties in flood hazard modeling, topography, and mapping limitations. Freeboard also provides a measure of safety against errors that may be introduced by inaccurate interpretation of flood profiles, the use of unstable benchmarks, and surveying errors. Further, floods at levels above the 1-percent annual chance elevation do occur, so added freeboard provides some protection against higher floods as well.

Incentive programs such as the CRS encourage the adoption of higher regulatory standards such as freeboard. In addition, some states also require that their communities regulate to a higher standard for certain aspects of floodplain management. Nineteen states have stricter building construction requirements than does the NFIP. The most common of which is freeboard. The measure of protection bestowed buildings where freeboard has been applied is also rewarded through lower flood insurance premiums.

- ***CB-8. The benefits of adopting freeboard should be widely promoted through training, FEMA and community websites, and in technical publications. Communities should be strongly encouraged to codify the requirement in their local ordinances.***
- ***CB-2. Promote frequent verification inspections during construction.*** One of the most effective ways to ensure compliance with the NFIP building standards, as well as higher standards such as freeboard requirements that a community may have adopted, is to inspect the site frequently during construction. This is particularly important during the earlier phases of construction because that is when errors in the elevation of the lowest floor and the placement of electrical and mechanical equipment are most easily found and corrected. An inspection program also puts builders, developers, and property owners on notice that the community will insist that projects are completed in compliance with the regulations.
- ***CB-3. Perform periodic checks to ensure that the property continues to remain in compliance.***

Communities should periodically check to ensure that the property continues to remain in compliance over time. Later inspections are particularly important when a building has an enclosure below the lowest floor. Such areas can be easily modified into habitable fully furnished space in violation of the NFIP regulations creating safety hazards. This study identified 30 noncompliant finished enclosures. The majority, if not all, are anticipated to have been converted to habitable fully finished living space without community consent.

- ***CB-4. A concerted effort is needed to focus greater attention on community permit file recordkeeping.***

Strong adherence to a floodplain management program that requires permits for all floodplain development, monitors construction as it takes place as well as periodically over time to ensure continued compliance with the NFIP requirements or the community's own higher standards, and ensures adequate documentation of those activities, benefits the NFIP compliance program in two ways. First, it allows FEMA and its state partners involved in community monitoring activities to assess quickly the adequacy of the community's program and direct limited resources towards communities with the greatest needs. Second, good records show what was approved, forming a "paper trail" needed for administrative or legal proceedings when buildings are found to be in violation of the community's ordinance. Complete records are also of value to future buyers and owners seeking information about the property. This information may include information on the placement of fill on the site, building standards, and key elevation data needed for flood insurance rating. Improvements in this area may be brought about by having FEMA regional offices, FEMA state partners, and Insurance Services Office, Inc. (ISO)/CRS personnel focus greater attention on the record keeping requirements of the program during contacts with communities.

- ***CB-5. FEMA should consider revising the opening requirements found in 44 CFR [Code of Federal Regulations] 60.3 (c)(5) for buildings in coastal AE zones with non supporting breakaway walls.***

The FEMA 2000 Coastal Construction Manual recommends that buildings in coastal AE zones be constructed to be more resistant to coastal flood forces. Further, the nation's private sector building code organizations and consensus standards groups (i.e., IBC [International Building Code], IRC [International Residential Code], NFPA [National Fire Protection Association] 5000, ASCE 7 [American Society of Civil Engineers], ASCE 24) recognize the Coastal AE zone hazard and require appropriate design and construction requirements similar to those established for VE zones under the NFIP. Nonetheless, the Coastal AE zone, has yet to be included in the NFIP regulations. At present, buildings located in coastal AE zones and constructed to Zone VE standards that include non supporting breakaway walls below the lowest floor but that do not also have openings that meet the openings requirements of 44 CFR 60.3(c)(5) are considered noncompliant. Thirteen of the noncompliant buildings identified by this study as having insufficient openings are pile and column buildings that appear to be built to Zone VE standards in Zone AE. It is recognized that such a regulatory change does not happen without great deliberation. Until such time as a regulatory change might be implemented, FEMA should issue clear guidance regarding the opening requirement in breakaway walls in coastal AE zones.

- ***CB-6. FEMA should continue its support of training for local staff, state training requirements, and certification of local floodplain managers.***

It is impossible to know if the instances of noncompliance found in this study are the result of misunderstandings concerning NFIP requirements by local officials, willful disregard, less importance or focus placed on ensuring that certain requirements are met, or lack of enforcement once violations are found. Nonetheless, it is widely believed that most communities and individuals are willing to abide by technical standards set for the program and that public servants are interested in protecting people and their property. With the latter premise in mind, it is surmised that community compliance could be improved by making more resources available for both FEMA and the states to increase staff levels and travel support, and to produce and deliver more workshop and training materials. This recommendation is also found in Part A of the evaluation of community compliance.

- ***CB-7. FEMA and ISO/CRS personnel should monitor compliance in communities participating in CRS more closely and take decisive action to bring communities into compliance or retrograde their CRS class.***

All CRS communities are required to maintain programs that are compliant with the NFIP standards. Compliance of CRS communities is arguably even more important to the success of the NFIP than that of other communities, for two reasons. First, CRS communities are being recognized and rewarded for having "better" floodplain management programs. Equity dictates that they be held to that standard and thus there ought to be no question about the NFIP minimum requirements' being met. Second, noncompliance in CRS communities increases the overall costs of the NFIP and affects the vitality of the flood insurance fund, just as noncompliance in other communities does. However, it could be argued that CRS community noncompliance is marginally even more costly, because the policyholders in those communities are contributing less to the National Flood Insurance Fund because they pay lower premiums.

ISO is supposed to retrograde a community to Class 10 (non-participation in the CRS and no discount on flood insurance) if it finds that a community does not meet the minimum

requirements of the NFIP (i.e., has program deficiencies or violations). ISO also is supposed to retrograde a community to Class 10 if it is not meeting the other prerequisites of participation in the CRS (for example, the community does not keep elevation certificates on file or does not conduct enough activities to receive 500 points). A retrograde to Class 10 removes a community from the CRS. Part A of the evaluation of community compliance found monitoring and enforcement in CRS communities to be deficient. Shortcomings are perceived to be the result of poor recordkeeping, confusion about roles and responsibilities and communication gaps between FEMA, FEMA's state partners, and ISO/CRS personnel. Study B found further evidence of noncompliant programs in CRS communities in the areas of both recordkeeping and noncompliant buildings. A concerted effort is needed to remedy the deficiencies in this program.

As discussed in Part A of this study, *Achieving Community Compliance*, (Monday et al., 2006) and throughout this study, the NFIP's success is based on two conditions. The first is that communities will choose to participate in the program and, therefore, will adopt and agree to enforce floodplain management ordinances established under authority of the National Flood Insurance Act, as amended. The incentive for such participation, and all that it entails, is the availability of flood insurance for the community and its property owners.

Second, once a community begins participating in the NFIP, it is assumed that it administers and enforces its ordinance in such a way that development in its floodprone areas actually does meet the local (and NFIP) standards and, thus, is protected from future flood damage. If either condition is not met—if communities do not elect to participate in the program or if they do so but fail to adequately enforce the standards – lives and property are placed in harm's way; buildings will suffer unnecessary flood damage; sound land use planning in floodplains is discouraged; the NFIP's actuarial soundness is jeopardized; changes in public policies and regulations may be based on unreliable data; and the costs to society from future floods will be increased unnecessarily. In short, a high level of continuous compliance with the NFIP standards is crucial to the program's success. Thus, the question of the extent and nature of compliance and noncompliance is an important element of any assessment of the NFIP and must be continually monitored.

FEMA recognizes and rewards CRS communities for having "better" floodplain management programs by reducing the cost of flood insurance premiums within the community; the effect is to reduce the community's contribution to the National Flood Insurance Fund. Thus, noncompliance in CRS communities increases the overall costs of the NFIP and affects the vitality of the flood insurance fund even more than noncompliance in other communities. A concerted effort is needed to remedy the deficiencies in this program.

## **2.8 Evaluation of the National Flood Insurance Program's Building Standards. Jones, et al.**

### **8.6. Recommendations**

***BS-1. The NFIP should not allow new A zone construction to be built with the top of the lowest floor at the BFE. Instead, the NFIP should require the top of the lowest floor of A zone structures to be built above the BFE such that the floor system is not in contact with flood waters during the base flood. This could be accomplished by either: 1) requiring sufficient freeboard, or 2) by changing the lowest floor reference elevation in A zones to be consistent with V zones (i.e., the bottom of the lowest horizontal structural member supporting the lowest floor must be at or above the BFE).***

- ***BS-2. The NFIP should require at least 1 foot of freeboard for all new construction in the special flood hazard area. The exact freeboard amount should be guided by several factors:***
  - ***Freeboard requirements contained in consensus standards such as ASCE 24*** (ASCE 2005). *ASCE 24* contains freeboard provisions, which vary by building importance (the standard requires critical facilities to be elevated higher above the BFE than typical residential structures, for example). The *ASCE 24* freeboard provisions apply to the lowest floor, the use of flood resistant materials and utilities.
  - ***Future flood conditions.*** *ASCE 24* does not account explicitly for future increases in flood hazards, thus, freeboard in excess of *ASCE 24* requirements may be appropriate in some flood hazard areas. The NFIP should consider flood loss reduction under present day base flood conditions and under future flood conditions when it establishes freeboard requirements.
  - ***Flood elevation frequency.*** The NFIP should attempt to establish freeboard requirements that are consistent with the flood risk. For example, 1 foot of freeboard at a site with a flood hazard factor of 20 may yield protection against a certain flood return period event. Equivalent protection at a site with a flood hazard factor of 75 would require more than 1 foot of freeboard.
- ***BS-3. The NFIP should mandate V zone design and construction practices in Coastal A zones*** (e.g., requiring open foundations and the area below the BFE to be free of obstructions, making the lowest floor reference elevation the bottom of the lowest horizontal structural member supporting the lowest floor, designing for simultaneous action of flood and wind). Some communities have mandated V zone standards in A zones for years, but implementation of this recommendation on a larger scale would require changes to the flood hazard mapping process and the FIRM. Note that the 2005 edition of *ASCE 24* requires new construction in Coastal A zones to meet V zone standards, and the FEMA has published supporting post-Katrina guidance.
- ***BS-4. The B/C [benefit/cost] results of this study are sensitive to the flood depth-damage function used in the analysis. The NFIP should, on an ongoing basis, review and update***

*depth-damage functions based on flood claims data, results of MAT [(FEMA) Mitigation Assessment Team] investigations and other data.* This may require collection of some data now deemed optional during the flood claims adjustment process.

- ***BS-5. Flood insurance premium rates should reflect anticipated flood damages and provide incentives to property owners and communities to exceed minimum NFIP building standards.*** The Community Rating System (CRS) does this on a community scale, but additional effort is needed to provide incentives to individuals. For example:
  - ***The NFIP should re-evaluate flood insurance premium discounts for buildings in A zones.*** Current A zone discounts effectively cease at one to two feet above the BFE (unlike V zones where substantial discounts are awarded for up to four feet of freeboard). Additional discounts for increased freeboard in A zones may be one of the most powerful arguments that can be made to property owners.
  - ***The NFIP should revise flood premium rates and coverage for NFIP-compliant pile-elevated buildings outside the V zone.*** Present rates and coverage penalize property owners who might otherwise adopt the superior pole-type construction, with pilings extending above the lowest floor to a higher floor or the roof.
- ***BS-6. The NFIP should consider development of an A Zone Risk Factor Rating Form and process, similar to that in place for V zones.*** This action could provide another way to reward A zone building owners to adopt design and construction practices that exceed NFIP minimum standards.

## **2.9 Managing Future Development Conditions in the National Flood Insurance Program. Blais, et al.**

### **6.2 Recommendations**

- ***FC-9. The primary recommendation of this study is that communities should be encouraged to manage future conditions of the watershed.***

As previously mentioned, this study identified two (2) approaches to managing future conditions: 1) managing the watershed to the anticipated 100-year build-out flood conditions; and, 2) attempting to avoid or delay the flood waters from entering the stream system thereby reducing or preventing an increase in the hydrograph. This study is not making a recommendation or distinction between the two (2) approaches; but it does recommend that communities should manage future conditions in the watershed using the approach that best suits their needs.

Below are a list and a brief description of other recommendations suggested by the project team. This list of recommendations is a direct result of the analysis performed for this project. These recommendations will aid in the implementation, maintenance, and enforcement of watershed management programs.

#### **Flood Studies**

- ***FC-1. The project team recommends that detailed flood studies, such as those currently being conducted with the Map Modernization program, should examine multiple return periods besides just the 100-year event.*** Three (3) return periods (e.g. 50-, 100-, and 500-year) are the minimum necessary to develop a loss curve that can be integrated to estimate the average annual loss. This provides a number of benefits.

First, the community could use the multiple return periods to perform an annualized assessment on their flood areas, which leads to an improved picture of the potential benefits and costs associated with their floodplain management strategy. Second, improving people's understanding that the 100-year flood event is a line drawn on a map and not a limitation in nature may cause people to consider purchasing flood insurance even though they are outside of the regulatory floodplain. Certainly recent events have shown that nature can always exceed the "worst event we ever have experienced" with another storm or flood.

#### **Establishing and Maintaining Flood Maps**

- ***FC-2. Determining how communities can effectively maintain their maps, keeping them up to date, is crucial to developing an effective management program. Approval of the use of HAZUS at the Level 1 analysis for communities that cannot afford detailed flood studies may be a good start to getting 100% flood mapping throughout the United States.*** That is, use HAZUS to develop non-engineered floodplains for communities with no flood maps or where flood studies do not exist.

- ***FC-3. Promote loss estimation along with mapping efforts. Whenever a Draft Flood Insurance Rate Map (DFIRM) has been completed, perform the loss estimation to determine the overall flood risk.*** Programs such as HAZUS provide an opportunity for the floodplain manager and building and safety officials to present scientifically based information to the elected officials to help them in the decision making process. This was the process used in Mecklenburg County to help generate the political will.

### **Floodplain Management Programs**

- ***FC-4. The analysis suggests that the “No Adverse Impact” initiative launched by ASFPM and FEMA should continue to be supported with credits in the community rating system since these activities are an excellent way to reduce future losses and analysis efforts such as this can assist in promoting such initiatives.***

As noted above, loss estimation can help develop political will and can aid public outreach. This is complicated by the fact that capturing the necessary data is a complicated process that takes significant time and resources. It is recommended that FEMA consider encouraging these efforts within the Hazard Mitigation Grant Program (HMGP) or other FEMA mitigation grant activities.

- ***FC-5. The project team believes that the concept of on-site storage may need further research and analysis to demonstrate that the concept not only reduces the 100-year flood losses as seen in this analysis, but that it is effective in reducing the average annual losses.*** It is recommended that the communities using on-site storage in this project might be given grants to develop sufficient flood data to perform an annualized assessment for their current and future flood conditions. This will allow the communities and FEMA to determine how effective this approach really is.

### **Data Collection Guidelines**

- ***FC-6. The project team recommends that FEMA develop a guide for local governments to provide outreach and training to local governments discussing potential data sources and data collection activities that can help the community define its overall risk.*** Assuming the communities in the study are typical, the project team believes there is a large amount of data available in most communities, but much of it is not coordinated, contains inaccuracies, is incomplete, and/or may be difficult to obtain.

These guidelines are necessary to inform communities of the data needs. With this knowledge communities can assess the work needed to complete this type of work. Without these guidelines communities may underestimate the cost to perform such an effort and may get discouraged as assumptions need to be made.

Further, given the proper guidelines, communities throughout the U.S. could use the tools applied by the project team to determine the most effective floodplain management approach for their community.

## Lack of Knowledge

The interviewees felt that lack of knowledge was a major barrier in the implementation of the NFIP and future floodplain condition programs. There are many reasons that this barrier has not been able to be overcome. Below is a sample of the reasons provided by the interviewees:

- Community (elected) officials only stay in office for a few years, so they do not necessarily familiarize themselves with the details of the NFIP.
- Developers only know the regulations of what they can or cannot do when building a structure. They see it as an annoyance because they do not have free reign in their designs and they believe that their engineers don't know what flood proofing is.
- The floodplain managers know all about the NFIP, but they have not been able to completely educate the community, due to what they perceive as a lack of interest.

In order for the project team to define the losses avoided and completely understand the potential impacts and subsequent savings, each community had to obtain additional hydrologic and hydraulic (H&H) modeling assuming that on-site storage would not be effective.

- ***FC-7. Preserving the baseline H&H analysis for built-out conditions could be useful to communities in educating their elected officials, developers, and public regarding the reasoning behind floodplain management for future conditions.***

## Special Flood Hazard Area (SFHA)

The interviewees believe that the flood insurance maps create a false sense of security amongst the general population caused in part by the line on the map being called the 100-year floodplain (also known as the SFHA). They felt that the public interprets it as the chance of getting flooded once every 100 years. However, this is misleading because they do not understand that the 100-year floodplain is the area that is affected should such a storm occur.

- ***FC-8. Although difficult, the project team recommends using the available tools to educate communities on total flood risk and not just the 100-year flood.***

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## ***2.10 The National Flood Insurance Program's Mandatory Purchase Requirement: Policies, Processes and Stakeholders. Tobin and Calfee.***

### **13. Recommendations**

Consistent and effective implementation of the mandatory purchase requirement of the Flood Disaster Protection Act of 1973, as amended, is affected by the large number of agencies and institutions that are responsible for implementation as well as by the complexity of the requirement itself. Without a single agency that exercises an oversight or monitoring role to promote consistency and compliance, the key actors have understandably adopted different approaches to as well as different interpretations of the same legislative language. Different interpretations are not always undesirable, but they can be confusing. Few people describe the federal flood insurance program as easily understood, as the present study of a small part of the program suggests.

The recommendations that follow are intended to promote consistency and effective implementation of the mandatory purchase requirement. If the goal of the Congress is to reduce federal disaster assistance and to place some or all of the risk of living and working in floodplains on those who choose to do so, then there is much that can be done to achieve these goals through enhanced implementation of the requirement.

Many recommendations are feasible while others are less so. For example, some people have suggested that all property owners in SFHAs with mortgages, whether from regulated or nonregulated lenders, should be required to purchase flood insurance. Others argue that all property owners in these areas, including those without mortgages, should have that obligation imposed on them. These may be desirable objectives, but there presently exists no structure or institutional arrangement to monitor compliance among those not now subject to the mandatory purchase requirement or to sanction their noncompliance. The compliance system now in operation has the virtue of relying on agencies and institutions, although created for other purposes that can monitor compliance and impose sanctions for noncompliance, both of which are prerequisites for successful implementation.

Among the recommendations that are feasible, improvements can begin with changes in the legislation that requires the purchase of flood insurance for certain property owners as well as with the agencies responsible for monitoring compliance.

#### **13.1 Congress**

##### **13.1.1 Essential Actions**

- ***MP-1. Increase the maximum federal flood insurance available to the same amount as the maximum amount of a conforming loan that Freddie Mac or Fannie Mae can purchase (i.e., \$359,650 in 2005).***

- ***MP-2. Permit annual automatic adjustments in the maximum coverage available through the NFIP to coincide with changes in the maximum dollar amount of conforming loans that Freddie Mac or Fannie Mae can purchase.***
- ***MP-3. Require federal flood insurance policies to contain an escalator clause (similar to standard hazard policies) to ensure that the amount of coverage is automatically adjusted when the replacement cost of the insured structure increases.***
- ***MP-4. Eliminate the differences between federally regulated lenders, Fannie Mae, and Freddie Mac in the minimum insurance requirements that now exist for loans subject to the mandatory purchase requirement.*** All loans subject to the requirement should have the same minimum requirements for flood insurance.
- ***MP-5. Require that the minimum amount of coverage in place for a designated loan be at least equal to the replacement value of a building or manufactured home or to the maximum limit of coverage made available through the NFIP with respect to the particular type of property, whichever is less, even when the principal balance of a loan is less than the replacement value.***
- ***MP-6. Revise the requirements pertaining to lenders' notice of special flood hazard and availability of federal disaster relief.*** Regulated lenders should be required to notify their borrowers in SFHAs in participating communities that:
  - Coverage provided through the NFIP for contents is separate from coverage for damage to their homes or businesses;
  - NFIP policies do not fully protect borrowers against partial loss or damage to their homes or businesses if these policies cover less than 80 percent of the replacement cost; and,
  - They may be eligible for exemption from the mandatory purchase requirement if their property is above the base flood elevation.
- ***MP-7. Prohibit, after a lender's notification that flood insurance is required, a property owner's receipt of federal disaster assistance related to floods if insurance coverage for floods is less than 75 percent of the minimum amounts of coverage required.***
- ***MP-8. Specify that a regulated lender's purchase of a loan requires the completion of a SFHD [Standard Flood Hazard Determination] form.***
- ***MP-9. Require that SFHD forms produced in conjunction with a regulated lender's making, increasing, extending, renewing, or purchasing of a loan inside of SFHAs in a participating community be given to borrowers as soon as practicable before such loans are made, increased, renewed, extended, or purchased.*** This change will reduce borrowers' costs, minimize or eliminate the need for insurance agents to obtain separate determinations, and emphasize borrowers' location in areas of high risk for flooding.

### 13.1.2 Other High Priority Actions

- ***MP-10. Require that SFHD forms produced in conjunction with a regulated lender's making, increasing, extending, renewing, or purchasing of a loan outside of SFHAs in a participating community be given to borrowers with information indicating that the purchase of flood insurance may be advisable because flooding is not limited to high-risk SFHAs and can occur almost anywhere.*** This notification can indicate the availability of FEMA's low-cost Preferred Risk Policies for homeowners in areas of low to moderate risk.
- ***MP-11. Exempt loans from federally regulated lenders with an original outstanding principal balance of \$10,000 or less and a repayment term of one year or less from the mandatory purchase requirement.*** The present limit of \$5,000 has not changed since 1994.
- ***MP-12. Require flood insurance for all improved real estate and manufactured homes in SFHAs (with the exception of loans with an original outstanding principal balance of \$10,000 or less and a repayment term of one year or less and for state-owned properties covered by self-insurance satisfactory to FEMA's director).*** However desirable this recommendation may be, it cannot be implemented successfully in the absence of system to monitor compliance. Such a system does not now exist.
- ***MP-13. Prohibit regulated lenders from making, increasing, renewing, extending, or purchasing loans for improved real estate or manufactured homes in SFHAs in communities that do not participate in the NFIP.*** This change could replicate a similar provision (i.e., Section 202(b)) in the 1973 Flood Disaster Protection Act.
- ***MP-14. Require regulated lenders to monitor loans in their portfolios for changes in FIRMs that increase or decrease the size of a SFHA or changes in the status of a community's participation in the NFIP.***
- ***MP-15. Specify that such changes require a regulated lender's completion or revision of a SHFD form.***
- ***MP-16. Mandate that regulated lenders have procedures in place to require a borrower's purchase of flood insurance (or the forced placement of flood insurance, if necessary) within 90 days of a change to a FIRM that places improved real estate or a manufactured home in a SFHA at any time after a loan from a regulated lender is made, increased, renewed, extended, or purchased.***
- ***MP-17. Mandate that regulated lenders have procedures in place to require a borrower's purchase of flood insurance (or the forced placement of flood insurance, if necessary) within 45 days if a community's initial entry into the NFIP or its removal from suspension from the NFIP places improved real estate or a manufactured home in a SFHA at any time after a loan from a regulated lender is made, increased, renewed, extended, or purchased.***

- *MP-18. Require, for regulated lenders that use third-party vendors for flood determinations, life-of-loan service with transferability for all designated loans.*
- *MP-19. Prohibit regulated lenders that use flood determination companies from selling, purchasing, or securitizing loans that do not have life-of-loan flood determinations with transferability service.*
- *MP-20. Require condominium associations in SFHAs in participating communities to purchase flood insurance at least equal to the lesser of 100 percent of the insurable value of each insured building or the maximum coverage available through the NFIP.*
- *MP-21. Require OFHEO's [Office of Federal Housing Enterprise Oversight] annual report to summarize its efforts and activities to ensure and monitor Freddie Mac's and Fannie Mae's compliance with the mandatory purchase requirement.*

### 13.1.3 Medium Priority

- *MP-22. Amend sections 102(a) and (b) of the Flood Disaster Protection Act of 1973, as amended, to clarify that the value of land associated with a loan cannot be insured.*
- *MP-23. Strike the words "at the time of origination or" from section 102(a)(e)(1) of the Flood Disaster Protection Act of 1973, as amended.* These words imply that forced placement of flood insurance is appropriate at the time of loan origination, a position contrary to the preferences and interpretation of FEMA and the federal entities for lending regulation.
- *MP-24. Strike the words "other than general or special revenue sharing or formula grants made to states" from section 3(a)(3) of the Flood Disaster Protection Act of 1973, as amended.* States should not be encouraged or permitted to use federal funds to finance or promote development, acquisition, or construction in SFHAs unless such development, acquisition, or construction is appropriately insured against the risks of flooding.
- *MP-25. Eliminate the requirement in section 1364(b) of the Flood Disaster Protection Act of 1973, as amended, that the director of FEMA (or his designee) be informed of the identity of the loan servicer when a borrower with a designated loan increases, renews, or extends a loan with the original lender and there has been no change in the lender's loan servicer.*
- *MP-26. Include, in section 102(f)(2) of the Flood Disaster Protection Act of 1973, as amended, a regulated lender's pattern or practice of failure to complete a SFHD form as a violation that is subject to a civil money penalty*
- *MP-27. Allow borrowers to use the SFHD form to confirm a building's location if a designated loan is refinanced, increased, renewed, or extended with the original or a subsequent regulated lender and no map changes have occurred within seven years of the initial determination.*

- ***MP–28. Extend the escrow requirement, in section 102(d) of the Flood Disaster Protection Act of 1973, as amended, to all loans associated with improved real estate and manufactured homes in SFHAs in communities that participate in the NFIP.*** The requirement is now limited to residential improved real estate.
- ***MP–29. Reinststitute the requirement, included in section 529 of the 1994 Reform Act, that federal entities for lending regulation complete reports every two years that summarize their efforts to ensure compliance with the mandatory purchase requirement.*** These reports should indicate the number of institutions examined, the number and types of violations identified, the number and amount of civil money penalties imposed, the number and type of violations associated with each civil money penalty, problems that regulated lenders encounter in implementing the mandatory purchase requirement, and suggestions for improving its implementation. A similar reporting requirement should be imposed on federal agency lenders. Although these agencies do not have the authority to impose civil money penalties, the agency reports should summarize their efforts to ensure compliance among recipients of federal grants and federally insured or guaranteed loans.
- ***MP–30. Require, for all regulated lenders deemed to have committed a pattern or practice of committing violations of section 102(f) of the Flood Disaster Protection Act of 1973, as amended, the chief executive officer to file annually a statement of full compliance with the mandatory purchase requirement with the appropriate entity for lending regulation until released from that obligation by that entity.***
- ***MP–31. Require the Farm Credit Administration to ensure the consistency of its flood-related policies and procedures with the principles and standards that the FFIEC [Federal Financial Institutions Examination Council] has developed for the federal examination of regulated financial institutions.***
- ***MP–32. Consider whether the mandatory purchase requirement is appropriately sensitive to designated loans for agricultural buildings (but not for rural or farm residences). Alternatively, Congress (and FEMA) should consider lower premium rates for agricultural buildings, reduction in fees for multiple agricultural buildings, higher deductibles on federal flood insurance for such buildings, and less costly alternatives for Letters of Map Amendment.***
- ***MP–33. Establish a limit below which flood insurance is not required for federal grants.***

## 13.2 FEMA

FEMA should explore opportunities to exercise a leadership role in promoting compliance and in assisting the federal entities for lending regulation to meet their obligations related to flood insurance. This role need not engage FEMA in a situation in which it regulates lenders or enforces compliance with the requirement. As the following recommendations suggest, however, there is much that FEMA can do.

### 13.2.1 Essential Actions

- ***MP–34. Simplify the explanation of federal flood insurance, which is often perceived to be difficult to understand and interpret, thus discouraging some property owners in SFHAs from purchasing and retaining coverage.*** The process of simplification should address the seeming inconsistency in FEMA’s explanation of how the NFIP works, depending on the report or document examined. The agency’s explanations about when insurance is required during construction provide an example.
- ***MP–35. Update and revise the Mandatory Purchase of Flood Insurance Guidelines (FEMA 1999) in collaboration with key stakeholders, including the federal entities for lending regulation, federally regulated lenders, insurance companies and brokers, flood zone determination vendors, and government-sponsored enterprises.*** FEMA should ensure that the *Guidelines* address a specific audience, such as the lending community, rather than a generic audience. The *Guidelines* should be simplified, should provide examples to illustrate requirements, and should be user-friendly. The *Guidelines* presently assume considerable familiarity with flood mapping and floodplain management. If the *Guidelines* are intended to address the needs of regulated lenders, then entire sections can be deleted (e.g., the discussion of community-initiated map revisions) while other sections should be added. As an illustration, the format should be amended to facilitate lenders’ explanation to borrowers why flood insurance is required (or recommended) due to a borrower’s relative exposure to flood risk.
- ***MP–36. Ensure the Guidelines’ accuracy and their consistency with the rules and procedures of federal lenders and the federal entities for lending regulation as well as with the agency’s Flood Insurance Manual.*** Revisions should address such topics as insurance during construction; escrow requirements for multifamily dwellings; loans in nonparticipating communities; coverage for condominiums; and the proper amount of civil money penalties that the federal regulatory agencies can impose. The use of plain English for the *Flood Insurance Manual* is highly desirable.
- ***MP–37. Revise the Standard Flood Hazard Determination form by:***
  - Adding an explanation to the form of the various flood zones and the relative risk of flooding in each zone;
  - Eliminating the requirement for a lender’s identification number;
  - Changing Block 5, “Amount of Flood Insurance Required,” to “Minimum Amount of Flood Insurance Required”;
  - Indicating the availability of federal flood insurance in all zones and that flooding is not limited or restricted to SFHAs;
  - Indicating the possible eligibility for administrative grandfathering; and
  - Indicating that federal flood insurance is available for most buildings and manufactured homes in participating communities (rather than being available for *all* buildings and manufactured homes in participating communities).

- ***MP–38. Examine, as recommended by the agency’s Office of Inspector General (IG 2000), the feasibility of legislative changes that would address nonregulated lenders and homeowners without flood insurance in SFHAs.*** This review should assess the feasibility of requiring flood insurance in states where there is a high incidence of flooding and flood insurance claims outside of SFHAs.
- ***MP–39. Eliminate Letters of Map Revision based on Fill (LOMR–F).*** Their sole purpose is to avoid the mandatory purchase requirement, and they are inconsistent with the purposes of the National Flood Insurance Act, which is intended to “guide the development of proposed future construction, where practicable, away from locations which are threatened by flood hazards.”
- ***MP–40. Comply with Section 7 of the Coastal Barrier Improvement Act of 1990 (P.L. 101-591)*** by certifying annually to the Department of the Interior that the NFIP is in compliance with the act’s provisions, which limits the sale of federal flood insurance in CBRS units and in Otherwise Protected Areas after their designation.
- ***MP–41. Ask flood determination companies, perhaps through the National Flood Determination Association, to provide either: a) copies of all SFHD forms that indicate a building or a manufactured home is in a unit of the Coastal Barrier Resources System (CBRS) or Otherwise Protected Area (OPA); or, b) a list of all such properties, including the street address, community name, and the date of the determination.*** FEMA should seek updated information from the flood determination companies at least annually. In turn, FEMA should compare the list of such properties with its record of policyholders.
- ***MP–42. Provide federally regulated lenders, federal regulatory agencies, and government-sponsored enterprises with real-time access to: a) a database of buildings and manufactured homes in CBRS and OPA that are legislatively grandfathered for purposes of federal flood insurance; and, b) a database of buildings and manufactured homes in CBRS and OPA that are ineligible for federal flood insurance because they were constructed after designation of the CBRS or OPA.***

### 13.2.2 Other High Priority Actions

- ***MP–43. Revise the Mortgage Portfolio Protection Program (MPPP),*** which was created as a means to force place insurance coverage on structures for which flood insurance is required. The program is not competitive with private insurance and is administratively difficult to use. Although the MPPP is not intended to be competitive, the reason for requiring flood insurance is to have property owners share some of the financial risk associated with flooding through insurance. The MPPP also does not accommodate situations in which a property owner has two or more loans from different regulated lenders or provide a solution to the problem of underinsurance, which may be a more serious problem than the absence of required coverage. In particular, FEMA should:
  - Permit regulated lenders to use the MPPP to force place a second NFIP policy (with the total coverage not to exceed the maximum coverage permitted by law). The NFIP currently has no means to assist the efforts of regulated lenders to comply with the

mandatory purchase requirement when borrowers have coverage in amounts less than the minimum required by law.

- Identify and minimize the disincentives to lenders' use of the MPPP.
  - Eliminate the 15-day gap in coverage that now exists when lenders force place coverage through the MPPP. FEMA may be able to do so administratively by extending to 45 days from 30 days the "grace" period after expiration of a Standard Flood Insurance Policy.
  - Clarify that policies force placed through the MPPP are not eligible for the premium discounts associated with a community's participation in the Community Rating System. This clarification should be included in the *Mandatory Purchase of Flood Insurance Guidelines* as well as the agency's *Flood Insurance Manual*.
- ***MP-44. Clarify whether a regulated lender can force place a Standard Flood Insurance Policy on a designated loan.***
  - ***MP-45. Collect information about mortgages and location in SFHAs from applicants seeking flood-related disaster assistance and add related questions to postdisaster assistance surveys.***
  - ***MP-46. Eliminate administrative grandfathering, beginning with severe repetitive-loss properties.*** Terminate eligibility for administrative grandfathering upon any change in ownership of a building or manufactured home. Eliminate all other administrative grandfathering within three to five years (if not already terminated by a change in ownership).
  - ***MP-47. Revise the application for federal flood insurance to indicate that, where applicable, premiums are based on administrative grandfathering.***
  - ***MP-48. Develop and implement a record-keeping system that provides access to information needed to verify that administrative grandfathering was used to calculate a policyholder's premiums for flood insurance.*** The absence of information on administrative grandfathering compromises FEMA's ability to determine the NFIP's actuarial soundness, the consequences of remapping, and the extent to which insurance claims are for properties inside or outside of SFHAs.
  - ***MP-49. Consider how the Compendium of Flood Map Changes can better meet the needs of its intended users.*** For example, who are these users? What are their needs? How well are these needs addressed? What obligations, if any, does publication of the *Compendium* impose on regulated lenders (e.g., does it create the "awareness" required for these lenders to review loans affected by these changes to ascertain the need for flood insurance or change in existing coverage)?
  - ***MP-50. Develop a procedure that permits federal agency lenders and insurance agents that sell federal flood insurance to be informed of properties duly declared to be "in violation of State or local laws, regulations, or ordinances which are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas" and thus ineligible for federal flood insurance.***

- ***MP-51. Provide points to communities in the Community Rating System that facilitate public access to and awareness of properties duly declared to be “in violation of State or local laws, regulations, or ordinances which are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas” and thus ineligible for federal flood insurance.*** Points might be awarded for providing relevant information on a community’s website or for requiring deeds to indicate that a building is not eligible for federal flood insurance.
- ***MP-52. Provide the federal regulatory agencies with real-time access to data that would allow them to determine which buildings or manufactured homes are insured through the NFIP and which have had policies cancelled or not renewed.*** To facilitate use of such data, FEMA must ensure and improve the accuracy of the addresses associated with each policy. Faulty addresses are a common problem in FEMA’s policy database.
- ***MP-53. Conduct a study to examine the implications and consequences of section 1364(b) of the Flood Disaster Protection Act of 1973, as amended. This section requires regulated lending institutions and federal agency lenders to notify the director (or his designee) of changes in loan servicers.*** FEMA has designated Write Your Own (WYO) companies to receive these notifications. FEMA should: a) identify quantitative indicators that can be used to measure progress and success; b) determine whether the process works as intended; c) in consultation with the WYO companies, identify ways in which the process can be improved; and, d) assess whether and how the delegation to the WYO companies effectively promotes the NFIP’s objectives.

### 13.2.3 Medium Priority

- ***MP-54. Develop a flood insurance policy specifically addressed to the needs of owners of manufactured homes.*** These owners are not as well served as they might be with the present Standard Flood Insurance Policy.

## 13.3 FEMA and the Federal Entities for Lending Regulation

### 13.3.1 High Priority

- ***MP-55. Develop a system that permits a comprehensive and ongoing assessment of the level of lenders’ and borrowers’ compliance with the mandatory purchase requirement.*** This system, which FEMA should initiate, fund, and administer, should identify levels of compliance at loan origination as well as when renewal of coverage is required. This system may require sharing of data among federal agencies. FEMA and the FFIEC should identify any legislative changes that may be necessary to permit the sharing of the data required to implement the system proposed.

## 13.4 The FFIEC

- ***MP-56. Revise and update the Interagency Questions and Answers Regarding Flood Insurance*** (FFIEC 1997). When these questions and answers were issued, the FFIEC

indicated that it intended to update them on a regular basis. No updates have been issued. Within the revised questions and answers:

- Clarify that lenders cannot initiate the notification process associated with forced placement until an existing Standard Flood Insurance Policy has expired.
  - Clarify when flood insurance is required for buildings under construction in SFHAs.
  - Specify what constitutes the proof of coverage that borrowers must provide before a lender makes, increases, extends, renews, or purchases a loan. The FFIEC may wish to replicate Freddie Mac's (2004b) requirements.
- ***MP-57. Conduct a study that identifies differences and similarities in the federal regulatory agencies' determination of what constitutes a pattern or practice of committing violations of section 102(f) of the Flood Disaster Protection Act of 1973, as amended.*** In addition, the study should assess the impact of civil money penalties as a deterrent and determine whether the consequences justify the agencies' administrative costs of the CMP [Civil Money Penalty] process. If the present maximum penalty per violation does not serve as an effective deterrent, the study should recommend the dollar amounts per violation that would do so.
  - ***MP-58. Establish minimum requirements for the guarantees associated with third parties' completion of SFHD forms.***

### 13.5 Federal Entities for Lending Regulation

#### 13.5.1 Essential Actions

- ***MP-59. Require regulated lenders to provide their borrowers with a completed SFHD form as soon as practicable before making, increasing, renewing, or extending a loan or at any other time a lender receives or completes a SFHD form that will affect borrowers' premiums or their obligation to obtain flood insurance.***
- ***MP-60. Develop and implement during reviews of lenders' loan portfolios a common procedure for assessing the accuracy of lenders' flood determinations.*** The federal regulatory agencies may wish to consider procedures similar to those used by Freddie Mac or Fannie Mae.
- ***MP-61. Establish minimum requirements for life of loan with transferability services for flood determination companies.*** These requirements should address changes in flood zones; changes in community status; LOMA [Letter of Map Amendment] and LOMR [Letter of Map Revision]; and the changes that require notification to regulated lenders. The requirements could usefully include a provision that limits the need for notification of lenders to changes that might affect borrowers' premiums for flood insurance. Conversely, the requirements should preclude the need for flood determination companies to notify lenders of minor or inconsequential changes that will have no effect on premiums or coverage.

### 13.5.2 Other High Priority Actions

- ***MP–62. Adopt a common policy on requirements for the purchase of flood insurance for owners of condominium units and specify clearly the amount of coverage required.*** One goal of the requirements should be to facilitate lenders’ and insurance agents’ ability to explain and implement the mandatory purchase requirement.
- ***MP–63. Require that examination of lenders’ loan portfolios for purposes of flood insurance review a sample of loans issued prior to the previous examination to monitor for renewal of flood insurance on existing loans.***
- ***MP–64. Adopt a common definition of a “pattern or practice” of committing violations of section 102(f) of the Flood Disaster Protection Act of 1973, as amended.*** The goal should be a common understanding so that regulated lenders are subject to the same expectations about performance regardless of which agency oversees their compliance with the mandatory purchase requirement. The FDIC’s (2001b) [Federal Deposit Insurance Corporation] guidelines on the topic can serve as a model for this common definition.
- ***MP–65. Inform regulated lenders and the agencies’ examination staffs that federal flood insurance is not available for properties duly declared to be “in violation of state or local laws, regulations, or ordinances which are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas.”***
- ***MP–66. Develop policies or procedures to address satisfactorily potential coverage problems when there are two or more loans on a building or manufactured home.*** Secondary lien holders should not find themselves in a position where they must force place coverage for the value of all loans on a building when they hold only a portion of the value of these loans.

### 13.5.3 Medium Priority

- ***MP–67. Adopt a clear and common explanation of: a) when flood insurance is required and its effective date before or during construction; and, b) the amount of insurance required during construction (e.g., coverage should be equivalent to the anticipated value of the structure prior to construction, increasing amounts of coverage as construction progresses, etc).***

### 13.6 Federal Agency Lenders

- ***MP–68. Prior to providing any federal financial assistance, use flood determination companies to provide flood determinations with life-of-loan service with transferability.*** The life-of-loan service should include attention to changes in FIRMs, changes in a community’s participation in the NFIP, and Letters of Map Amendment.

- *MP-69. Develop and implement a system to track loans and grants so that it is possible to monitor compliance with the mandatory purchase requirement for the life of the loan or grant.*

### **13.7 Department of Agriculture**

- *MP-70. Complete the revision of the department's internal instruction guidelines for flood insurance as soon as possible.* These guidelines, issued in 1974, are outdated.

### **13.8 Department of Veterans Affairs**

- *MP-71. Clarify the meaning of "regular" flooding.*

### **13.9 Farmer Mac [Federal Agricultural Mortgage Corporation]**

- *MP-72. Require flood insurance on loans its purchases from nonregulated lenders when property securing the loan is in a SFHA in a participating community.*

## ***2.11 The National Flood Insurance Program's Market Penetration Rate: Estimates and Policy Implications. Dixon, et al.***

[Unlike the other reports in the Evaluation of the NFIP, this report does not set aside a section for recommendations. However, the excerpt below contains some suggestions from the authors' analysis.]

### **8. Implications for Market Penetration Goals and Next Steps**

The findings in the previous chapters raise several issues that are important for NFIP managers and policymakers to consider as they evaluate alternative targets for market penetration rates and strategies for achieving them. They also suggest several promising topics for additional research.

#### **8.1. Implications of Findings for Setting Market Penetration Targets and Developing Strategies to Achieve Them**

- ***MR-1. The low market penetration rate in communities with 500 or fewer homes in the SFHA presents a potential marketing opportunity for the NFIP.*** Just under 95 percent of the roughly 20,000 communities in the NFIP have fewer than 500 SFHs [Single-Family Home] in the SFHA, and the market penetration rates in these communities as a whole are low, ranging between 16 and 30 percent, depending on the estimate of market penetration used. Overall, these communities account for roughly 25 percent of SFHs in SFHAs nationwide. Policymakers need to better understand what causes the market penetration rate in these communities to be so low. Is it the lack of insurer presence in these communities, pervasive under-appreciation of risk, or less vigorous enforcement of the mandatory purchase requirement? Does the complexity of writing NFIP policies discourage agents in these communities from writing policies? While communities with relatively few homes in the SFHA present a growth opportunity for the NFIP, the sheer number of such communities presents challenges.
- ***MR-2. The costs and expected payoffs of strategies that can target the enormous number of small communities should be evaluated. Similarly, market penetration rates are lower in communities where a smaller share of homes are in the SFHA, and the costs and benefits of strategies to increase market penetration in these communities should also be investigated.***
- ***MR-3. NFIP managers should also try to better understand why market penetration rates are so much lower in communities not subject to coastal flooding (mainly inland communities) and what can be done to increase those market penetration rates.***

An estimated 1.7 million SFHs are in inland communities. NFIP managers should examine whether features of NFIP policies make them less attractive in inland areas (e.g., limited basement coverage), whether residents in inland areas systematically underestimate risk, or

whether the nature of the risk in inland areas (e.g., less variance in annual losses) makes flood insurance relatively less attractive.

The results of this study suggest that the decision to purchase flood insurance is not particularly sensitive to the price of flood insurance, at least over the range of flood insurance prices currently observed. Thus, in developing strategies to achieve market penetration targets, ***NFIP managers do not need to be overly focused on how moderate changes in insurance premiums (e.g., 25 percent or less) would affect market penetration rates.*** However, large changes in prices may well have proportionately much larger impacts on market penetration rates than the findings in this study suggest.

- ***MR-4. Financial regulators and NFIP managers should evaluate whether and how to improve compliance with the mandatory purchase requirement in important submarkets.*** Particular attention should be paid to how to improve compliance in communities with a relatively small number or percent of structures in the SFHA, that are not subject to coastal flooding, and that are in the Northeast.

Market penetration rates remain very low among homes not subject to the mandatory purchase requirement (on the order of 20 percent), and attention should be paid to what might be done to increase penetration in this segment of the market. The unwillingness of homeowners to purchase flood insurance has been an ongoing problem for the NFIP and was the primary reason for the mandatory purchase requirement. The low rates among homes that are not likely to be subject to the mandatory purchase requirement suggest that little has changed over the years and point to the importance of the mandatory purchase requirement in maintaining the market penetration rates that are observed today.

- ***MR-5. While increasing market penetration rates in the voluntary market will continue to be a challenge, NFIP managers should continue to assess strategies and their costs.*** Offering increased flexibility in the types of the losses that are covered and the amount of coverage available might be attractive in the voluntary market.

### 8.3. Moving Forward

While a substantial number of SFHs in SFHAs across the nation have flood insurance, an equally large number do not. This study has identified opportunities for increasing market penetration rates and attempted to identify some of the potential benefits of doing so. It has aimed to inform discussions by NFIP managers and stakeholders more generally about what the goals for annual policy growth and market penetration should be.

- ***MR-6. As policymakers and NFIP managers evaluate goals for growth in the number of policies and strategies for achieving them, they should consider both the costs and benefits of higher market penetration. Benefits should be measured against overall social objectives for the program and costs should be broadly defined. It should not be automatically assumed that the goal should be universal or nearly universal NFIP coverage.***

For example, high market penetration rates may not be desirable if the cost of achieving them is high and if, as the results of this study suggest, they do not lower disaster assistance payments much or induce greater compliance with NFIP requirements. However, higher market penetration rates may be socially desirable to the extent that there are failures on the demand side of the market (e.g., homeowners systematically underestimate flood risks) or on the supply side (e.g., few insurance agents with experience writing flood policies in small communities or prices in some regions that does not reflect actuarial risk) that limit the desirability or restrict the accessibility of flood insurance.

As this report has illustrated, many complex considerations need to be addressed in setting goals for policy growth. It may be infeasible to develop analytically based goals for policy growth or market penetration. A more practical approach may be to work to remove imperfections on the supply and demand sides of the market and let market penetration fall where it may. Even so, careful thought will still need to be given to how much investment is warranted to remove different market imperfections.

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## **2.12 Performance Assessment and Evaluation Measures for Periodic Use by the National Flood Insurance Program. Miller, et al.**

[The recommendations in this report are scattered throughout and not offered as a separate section. The excerpt below, from the report's Executive Summary, best presents this report's recommendations.]

The study recommends additional measures that would better inform stakeholders and policymakers about the NFIP's costs, benefits, and accomplishments and allow an ongoing assessment of the extent to which its implementation contributes to its goals.

Among the 31 groups of measures recommended, three address the occupancy and use of floodplains, three examine the costs and consequences of flooding, nine cover insurance rating and indemnity functions, nine address floodplain management and enforcement, three examine hazard identification and risk assessment, and the remaining four cover communications and marketing. *The highest priority additions to current measures are:*

- *PM-1. Enhanced tracking of the number and nature of properties in Special Flood Hazard Areas (SFHAs) and the NFIP penetration rate among those properties.*
- *PM-2. Better tracking of unresolved problems surfaced during CACs/CAVs.*
- *PM-3. Monitoring to detect communities with concentrations of submit-to-rate properties that are non-compliant with local building codes and standards.*
- *PM-4. Annually using the HAZUS simulation model to measure the reduction in the costs and consequences of floods during the past year that resulted from NFIP mitigation efforts.*
- *PM-5. Improving information on progress with flood hazard mapping.*

A number of data enhancements through new data collection would support cost-effective performance measure development and provide data that improve program management. *The most desirable enhancements appear to be:*

- *PM-6. Requiring agents selling policies to record information in their possession about structure value and the existence of a mortgage when writing a policy.*
- *PM-7. Promptly entering all Community Assistance Calls and Community Assistance Visits (CACs/CAVs) into the Community Information System.*
- *PM-8. Improving the flood depth and structure elevation data recorded by claims adjusters.*
- *PM-9. Improving and accelerating the flow of claims information to local officials charged with making substantial damage determinations.*
- *PM-10. Tracking of NFIP marketing by Write-Your-Own (WYO) companies.*

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### 3. CLASSIFICATION OF THE MEASURES BY NFIP GOAL

Table 32 maps the 31 groups of performance assessment and evaluation measures identified in prior chapters into the four goals. A dozen measures relate to decreasing flood risks, 16 measures relate to reducing the costs and consequences of flooding, and 22 measures to reducing demand and expectations for flood insurance. These three goals overlap. For example, reduced flood consequences will lessen the need for disaster assistance. Similarly, decreasing flood risk is likely to reduce the consequences when floods do occur. Our mapping tries to focus on the primary thrust of the performance assessment and evaluation measures, but our choices are somewhat arbitrary. Only two measures address the fourth goal, and one of those only peripherally because the CRS includes incentives for restoring and preserving the natural and beneficial values of floodplains.

**Table 32. Mapping of the 30 Performance Assessment and Evaluation Measures Into the Four NFIP Goals**

Performance Assessment and Evaluation Measure	Decrease Flood Risk	Reduce Costs & Consequences of Flooding	Reduce Demand & Expectations for Disaster Assistance	Restore & Preserve Natural & Beneficial Value of Floodplains
1. Number of Structures at Risk of Flooding	X			
2. Environmental Impact of Designating Flood-Prone Areas as Green Space or Crop Areas				X
3. NFIP's Impact on the Costs & Consequences of Flooding		X		
4. NFIP's Impact on Annual Flood Losses		X		
5. NFIP's Impact on Federal Flood Costs			X	
6. Detailed Benefits of the NFIP		X	X	
7. Continue & Marginally Expand the Bureau Net Data Base on Insurance-in-Force & the Associated National Actuarial Rate Report			X	
8. Underwriting Experience by State & Regional Areas			X	
9. Additional Information on Underwriting Experience by State & Regional Areas			X	
10. Insurer Compliance	X	X	X	
11. Repetitive Loss & Substantial Damage	X	X	X	
12. NFIP Penetration: the Basics			X	
13. Details of NFIP Penetration: the Possibly Unaffordable Ideal			X	
14. Reasons for Non-Renewal			X	
15. Predictors of NFIP Penetration			X	
16. Mitigation Planning	X	X		
17. Community Information System (CIS)	X	X	X	
18. CAC/CAV Activity & Outcomes	X	X	X	
19. Floodplain Management Staff	X	X	X	
20. NFIP & CRS Compliance	X	X		
21. Effects of Basic NFIP Requirements & CRS Incentive Items on Flood Losses	X	X		X
22. Evaluation of Building Standards	X	X	X	
23. Elevation Data Accuracy	X	X	X	
24. Submit to Rate Requests & their Processing & Outcomes	X		X	
25. Efficiency in Mapping		X		
26. Map Cost Sharing		X		
27. Map Update Need & Progress		X		

<b>Performance Assessment and Evaluation Measure</b>	<b>Decrease Flood Risk</b>	<b>Reduce Costs &amp; Consequences of Flooding</b>	<b>Reduce Demand &amp; Expectations for Disaster Assistance</b>	<b>Restore &amp; Preserve Natural &amp; Beneficial Value of Floodplains</b>
28. Nature & Outcomes of Paid NFIP Advertising			X	
29. Marketing by Write-Your-Own Companies			X	
30. Agent Training			X	
31. Public & Purchaser Attitudes			X	

## **2.13 State Roles and Responsibilities in the National Flood Insurance Program. Mittler, et al.**

### **5. Recommendations**

The NFIP has been based primarily on a long-term relationship between the federal government and local communities that choose to participate. By statute, the state's role has been as a secondary assistant to the federal government in training and aiding local communities. The recommendations include major changes to the state role in the program and enhancements to the current role. The following recommendations are provided in summarized form. The full text for each recommendation is included in Section 5.

#### **5.1 FEMA**

##### **5.1.1 Essential Actions**

- ***SR-1. FEMA should initiate in partnership with the states a process to amend the NFIP to provide the states with a substantial role in the NFIP, to take advantage of state capabilities and land use authorities that reside with states. One consequence will be stronger states that will help ensure that floodplain management can guide development and redevelopment to be at lower risk from flooding and to prevent increases in flooding potential.*** The new requirements should accommodate currently effective states by providing incentives for the continued adoption of additional policies and tasks as well as less effective states by providing needed resources to build capacity. As there are many existing models in existing federal laws such as clean water and environmental protection that demonstrate how responsibilities are delegated to states, the process should include a comprehensive review of existing relationships to help establish the most satisfactory option. This recommendation should be implemented through convening a panel of stakeholders as soon as possible because changes to federal statutes typically require considerable time.

The following recommendations are intended to improve the current NFIP conditions. They are also ideas that can be incorporated into an enhanced statutory role for states.

- ***SR-2. Review, update, publish and enforce a comprehensive administrative process for addressing NFIP compliance violations in a systematic manner, beginning with identification of the violation and ending with final resolution. Each party to the compliance action must be knowledgeable of the process and acknowledge the deadlines. This process must include public disclosure of the compliance action.*** Similar recommendations resulting from the study on community compliance as part of the NFIP Evaluation (Monday *et al.* 2006) may be consulted for additional guidance on this issue.
- ***SR-3. Implement voluntary state Cooperating Compliance Partner (CCP) program modeled on FEMA's Cooperating Technical Partner (CTP) mapping program.*** The CTP Program allows communities, regional agencies, and state agencies that have the interest and capability to become active partners in the FEMA Flood Hazard Mapping Program. The CCP

Program would allow state agencies that have the interest and capability to become active partners in the NFIP by encouraging states to partner with FEMA in taking official action with regard to sanctioning communities. States would have to demonstrate the means and the authority to assume responsibilities as delegated by FEMA, recognizing that there may be gradations of partnerships based on a state's existing authorities. The program would allow participating states to resolve NFIP violations through: 1) working with the community to fix violations; 2) notifying the community of potential sanctions, and 3) enacting sanctions. CPP would make FEMA resources available to focus on other NFIP aspects. Changes to federal NFIP regulations at 44 CFR may be necessary to allow FEMA to delegate more responsibility to the states. Other FEMA programs (*e.g.*, Hazard Mitigation Grant Program's Managing States concept) and other federal agencies (*e.g.*, U.S. Environmental Protection Agency, Department of Transportation) may have state participatory program models that would prove useful in developing a CCP or similar program.

- ***SR-4. FEMA should institute guidelines for optimal response times for replying to requests for technical assistance from State Coordinators.*** Consistent and timely FEMA regional responses to state NFIP technical assistance requests will improve state effectiveness and must be one of the agency's primary considerations to support the goals of the program because State Coordinator requests for technical assistance or guidance to NFIP communities represent an important element in the day-to-day administration of the program. State Coordinators contact the Regional staff when they have exhausted other sources of information; short response times from FEMA (often less than 10 working days) are critical to keep the state role of assisting communities functioning smoothly. To be responsive, regional responses should not be delayed because of FEMA employee responsibilities for other programs such as HMGP, FMA, or disaster response for example.
- ***SR-5. Improve the CIS, making it the single most valuable online tool for state officials to 1) access community claims information, 2) access FEMA policy interpretations through official and unofficial policy manuals, and 3) maintain community contact information.*** Several state officials expressed dismay with the CIS in general, but it was unclear from the interviews exactly what aspects are troublesome. Therefore, state officials are advised to communicate with their FEMA Regional offices to clarify problems and propose more specific solutions. The CIS has been under revision as an online tool for state officials in recent years, although not all of those changes are obvious yet to end users. Access to data input by FIA, such as Biennial Report data and FIA claims data, is dramatically improved yet still not available to communities without a formal request to the state. State officials express a need for timely and up to date contact information for local NFIP administrators, and FEMA often lacks up to date information on community elected officials for official correspondence. Including this type of data on CIS and allowing editors and editing of community contact information by state and local officials would improve the usefulness of the CIS tool. Monday *et al.* (2006) includes a similar recommendation for revitalizing the CIS as a compliance tool because better record-keeping of community visits is necessary. See also SR8 for an additional suggestion for CIS.

### 5.1.2 Other High Priority Actions

- ***SR-6. At the region and headquarters levels, FEMA should accommodate state regionalization of floodplain management tasks by streamlining communication from state regions to the FEMA region.*** Regionalization refers to the delegation of state responsibilities to multiple field offices, district or regional offices. FEMA can do this by accommodating a single, direct state link to the FEMA Region and encouraging states to consider regionalizing staff when sufficient staff are available. Several states may never have the resources necessary to regionalize including sufficient personnel to staff a headquarters operation and multiple regional offices. Each state must balance economies of scale versus the benefits of regionalization.
- ***SR-7. FEMA should institute a two-tiered staffing requirement for states based on the number of NFIP communities in the state.*** Each state is currently encouraged by the CAP-SSSE agreement to employ at least one full-time employee, dedicated to NFIP tasks and funded through CAP. A threshold of 300 NFIP-participating communities, for instance, would trigger a new requirement for an additional CAP-funded full-time employee for NFIP tasks. This recommendation would alter the staffing levels of states with large numbers of participating communities, enhancing their ability to provide technical assistance to more communities each year and increasing the number of CAVs and CACs conducted. An alternative recommendation reviewed as part of this study was allowing states to contract CAV responsibilities out to private contractors. According to FEMA officials, FEMA has discouraged contracting of CAVs because it is generally proposed in weak states that will never develop in-house capabilities if they contract out these services.

### 5.1.3 Medium Priority

- ***SR-8. Use the internet to open the lines of communication between FEMA regions and all state agencies and staff. Reinstate an on-line NFIP Policy Manual for states and Regions and create a question and answer blog for the benefit of all readers.*** FEMA's recent strategy has been to incorporate information from an older policy manual into other guidance documents available to communities, such as FEMA 480 and the various technical manuals. These guidance documents generally did not exist when the original policy manual was issued. The states expressed a need, and FEMA has acknowledged a need for some formal mechanism for providing those policies that are not appropriate for inclusion in more formal publications.

## 5.2 Association of State Floodplain Managers (ASFPM)

### 5.2.1 Essential Actions

- ***SR-9. Continue to support the formation of state associations and chapters. In 2002, there were 32 states with associations, including several states, which participate in regional associations (ASFPM 2002).*** According to the August 2006 ASFPM web site, there are 41 states with associations. The associations play a critical role in supplementing the resources of states and communities, and in providing a non- governmental, peer-to-peer

information source. Individual state chapters, rather than multiple state associations, appear to be more effective at helping train community officials to become knowledgeable at integrating various programs related to reducing flood losses, and targeting specific activities that need to be addressed in a state, such as lobbying for legislation or providing state-regulation specific training to specific audiences. FEMA should also continue supporting these associations to the degree possible by providing speakers, hosting workshops, and recognizing contributions and feedback from association leaders.

- ***SR-10. Aggressively publicize the Certified Floodplain Manager [CFM] program to local communities where floodplain managers may not even be aware of the ASFPM, to colleges and universities with hazard programs, to a multitude of state agencies only peripherally involved in state floodplain management, and to high level state officials who have the ability to influence the required credentials for state floodplain managers.*** These actions will improve state programs by enhancing state and local capability and attracting interested college graduates to the field. ASFPM should continue to enlist FEMA's support for the CFM program through resources and added training programs, which increase the level of knowledge for floodplain managers.

### 5.3. State Officials

#### 5.3.1 Essential Actions

- ***SR-11.*** As evidenced by the conclusions of this report, state floodplain management responsibilities extend beyond the day-to-day tasks of the state NFIP Coordinator. ***State elected officials, legislators, agency directors, and departmental liaisons each have a responsibility to support the state's overall program of floodplain management by ensuring that the State Coordinators have tools essential to their jobs.*** One example might be funding an inventory of state buildings in the floodplain and ensuring the state's self-insurance status for flood damage. Armed with this essential knowledge, as well as a frank program assessment of the state's strengths and weaknesses, the State Coordinator is prepared to take advantage of windows of opportunity, such as flood disasters or changes in administration. Also, the state can more effectively fulfill its role in the NFIP partnership.
- ***SR-12. Integrate state-level environmental reviews of floodplain projects into local government permitting processes. This recommendation is particularly relevant for local communities with efficient permitting processes and heavy development pressure.*** Streamlined procedures for permitting and increasingly knowledgeable local permit officials result in better projects with more careful consideration of a range of hazards and impacts.

#### 5.3.2 Other High Priority Actions

- ***SR-13. Implement agency policy to require that state staff receive CFM certification from the ASFPM and provide funding for staff to take advanced training courses in floodplain management-related topics. State staff must be recognized experts in the field.*** Provide training for other state agencies to allow development of a cadre of CFMs in various agencies

who can coordinate actions to ensure effective implementation of state policies for floodplain development.

- ***SR-14. Explore the concept of regionalization for state staff.*** If geographical relocation of staff is not feasible, dividing staff responsibilities based on regions may be as effective. Ensure that staff relocated to regional offices still report to headquarters.
- ***SR-15. Take advantage of the capabilities of sub-state authorities such as ASFPM chapters, professional associations, councils of government, regional planning districts, and FEMA regional staff to ensure that all state program goals are met.***

### **5.2.3 Medium Priority**

- ***SR-16. Create career tracks for state floodplain management staff, especially technical staff such as engineers.***

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### 3. ACRONYMS

ASCE	American Society of Civil Engineers
ASFPM	Association of State Floodplain Managers
B/C	Benefit-Cost Ratio
BFE	Base Flood Elevation (1-percent-annual-chance) flood
CAC	Community Assistance Contact
CAP	Community Assistance Program
CAP-SSSE	Community Assistance Program – State Support Services Element
CAV	Community Assistance Visit
CBRS	Coastal Barrier Resource System
CCB	Community Compliance Part B
CFM	Certified Floodplain Manager
CFR	Code of Federal Regulations
CIS	Community Information System
CMP	Civil Money Penalty
CRS	Community Rating System
DEI	Developmental and Environmental Impact
DFIRM	Draft Flood Insurance Rate Map
EO 11988	Executive Order 11988
ESA	Endangered Species Act of 1973
Farmer Mac	Federal Agricultural Mortgage Corporation
FCA	Farm Credit Administration
FDIC	Federal Deposit Insurance Corporation
FEMA	Federal Emergency Management Agency
FFIEC	Federal Financial Institutions Examination Council
FIRA04	Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004
FIRM	Flood Insurance Rate Map
GAO	U.S. Government Accountability Office
HAZUS	HAZUS-MH Flood Model
H&H	Hydrologic and Hydraulic
HMGP	Hazard Mitigation Grant Program
IBC	International Building Code
ICC	Increased Cost of Compliance
IRC	International Residential Code
ISO	Insurance Services Office
LHSM	Lowest Horizontal Structural Members
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
LOMR-C	Letter of Map Revision-Conditional
LOMR-F	Letter of Map Revision based on Fill
MAT	(FEMA) Mitigation Assessment Team
MP	Mandatory Purchase Recommendation
MPPP	Mortgage Portfolio Protection Program

NEPA	National Environmental Policy Act of 1970
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NOAA	National Oceanic and Atmospheric Administration
OFHEO	Office of Federal Housing Enterprise Oversight
OPA	Otherwise Protected Area
SFH	Single-Family Home
SFHD	Standard Flood Hazard Determination
SR	State Roles and Responsibilities Recommendation
SFHA	Special Flood Hazard Area
USGS	U.S. Geological Survey
WPC	Water Policy Collaborative
WYO	Write Your Own



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