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An Evaluation of Compliance with the National Flood Insurance Program Part A: Achieving Community Compliance

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Paul Esformes, and Matthew Eng
with Tina Kinney and Marc Shapiro

American Institutes for Research

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**An Evaluation of Compliance with the National Flood
Insurance Program Part A:
Achieving Community Compliance**

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

**Jacquelyn L. Monday, Kristen Y. Grill,
Paul Esformes, and Matthew Eng
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**American Institutes for Research
1000 Thomas Jefferson St., NW
Washington, D.C. 20007**

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EVALUATION OF THE NATIONAL FLOOD INSURANCE PROGRAM

This Evaluation comprises a series of reports prepared by the American Institutes for Research (AIR) and selected subcontractors under a contract managed by AIR. These reports assess questions identified and prioritized by a steering committee about the National Flood Insurance Program. Individual reports 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.

Assessing the National Flood Insurance Program's Actuarial Soundness. Bingham, Charron, Kirschner, Messick, and Sabade, Deloitte Consulting.

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 Bouleware, 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 Environmental Reviews: An Assessment of FEMA's Implementation of NEPA and Executive Order 11988. Rosenbaum, American Institutes for Research.

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.

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

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EXECUTIVE SUMMARY

Background

Floods are the most common natural disaster in the United States, the most costly on average, and the most dangerous. Between 1955 and 1999 floods caused an annual average of about \$2 billion in direct damage to property, crops, and infrastructure, and 100 deaths. Because flooding is fairly predictable, however, a large proportion of these losses and deaths could have been avoided. The National Flood Insurance Act of 1968 (Public Law 90-448) was enacted by Congress as a comprehensive effort to minimize both flood damage and the financial impacts of floods on individuals and federal, state, and local governments.

A major component of the 1968 Act was the establishment of the National Flood Insurance Program (NFIP), through which federally backed flood insurance is made available to property owners and residents in communities that choose to participate in the Program. In return for the availability of such insurance, communities adopt and enforce minimum floodplain management requirements within the Special Flood Hazard Area of the community (as depicted on a map issued by the Federal Emergency Management Agency (FEMA)). These requirements are designed to prevent new development from increasing the flood threat and to protect new and existing buildings from anticipated flooding.

In general, communities participating in the NFIP must require permits for all new development in the SFHA; elevate the lowest floor of all residential development in the SFHA to or above the base flood elevation and elevate or floodproof the lowest floor of nonresidential buildings to that elevation; restrict development in the regulatory floodway; ensure that construction materials and methods used will minimize future flood damage; and treat substantially improved structures as new buildings that must meet the minimum NFIP standards.

The success of the NFIP depends on communities' ensuring that buildings and other development within their jurisdictions are constructed and maintained according to these standards so that flood losses will be minimized. If communities do not elect to participate in the program or if they do so but fail to adequately enforce the standards, then lives and property are placed in harm's way; buildings will suffer unnecessary flood damage; sound land use planning in floodplains will be discouraged; the NFIP's actuarial soundness will be 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.

There has never been a comprehensive assessment of nationwide compliance with NFIP standards. Although participating communities are monitored individually on a regular, though fairly infrequent, basis, the question of how well the NFIP is being administered across the United States has been unanswered. In 2000, the Department of Homeland Security's Federal Emergency Management Agency (FEMA) contracted with the American Institutes for Research (AIR) to perform a comprehensive evaluation of the NFIP. As one part of the evaluation, FEMA charged AIR with conducting a nationwide assessment of community compliance with the NFIP minimum floodplain management regulations as set forth in Title 44, Section 60.3, of the *Code of Federal Regulations* (44 CFR §60.3).

This summary describes the research methods used in this evaluation of community compliance, presents selected findings, and lists the most salient recommendations growing out of the study.

Method

A range of evaluative methods was considered in designing this study. The approach chosen focused on lengthy, open-ended interviews with purposively selected regional, state, and community floodplain management and insurance staff as well as specialists from the private and non-profit sectors. The sample was selected to be as representative as possible of the issues and problems faced nationwide, focusing in particular on the areas where current and future flood risk is greatest and thus where success in achieving compliance is most important. The FEMA regional offices included in the interviews covered more than 90 percent of the flood insurance policies and 80 percent of the communities participating in the NFIP. The study team shadowed staff on assistance visits conducted in four participating communities. In addition, the study team collected community files, policy guidance, and letter and communication templates and had access to the Community Information System (CIS) and Bureaunet databases and reporting tools to gather information on a number of subjects.

Findings

The Framework for Community Compliance with the NFIP

This evaluation found that the NFIP uses a “cooperative enforcement” model for its compliance program, combining numerous voluntary approaches (most notably financial incentives offered through the insurance side of the NFIP) with sanctions that can be used as needed. Under this cooperative enforcement scheme, it is assumed that most communities and individuals are willing to abide by technical standards set for the program, public servants want to protect people and their property, incentives are more efficient tools for compliance than sanctions, and personnel and other resources are highly constrained. These assumptions lead the NFIP compliance program to emphasize the ongoing provision of education about the program standards and how to reach them, rather than extensive monitoring, inspections, and penalties.

The NFIP compliance model used by FEMA has three main components: (1) promotion of compliance (technical assistance, education, training, incentives); (2) monitoring of community compliance (contact with communities and evaluation of their programs, use of institutionalized indicators, and recordkeeping); and (3) enforcement (use of sanctions including probation and suspension). These three components generally are viewed as essential to the process of achieving compliance and are found in varying forms in most regulatory programs.

This study and previous research have shown that, among the 20,000 participating communities nationwide, there is, in fact, a high level of willingness to comply with the NFIP standards; many exemplary local programs; and real progress being made by many communities in coping with flood risk. The fact that most of those communities are operating competent programs supports the underlying assumption and confirms that a predominantly cooperative enforcement model is an appropriate match for the NFIP. This is underscored by the research literature on cooperative enforcement strategies, which documents the effective use of this type of model by programs with characteristics resembling those of the NFIP.

The NFIP compliance program based on this model makes good use of the institutionalized aspects of the NFIP and is well-integrated with the NFIP insurance mechanisms. The study team encountered no major gaps in the framework of the compliance program.

Tradeoffs in the NFIP Compliance Program

The NFIP compliance program operates under certain constraints and must continually make tradeoffs to achieve an appropriate balance among competing objectives, approaches, and perspectives. Two constraints are paramount: statutory limits and finite resources. A number of additional conflicting factors must continually be balanced by the NFIP headquarters and regional staff and the state personnel, described below, and this affects the compliance program.

Number of communities vs. number of policies—Of the 20,000 communities participating in the NFIP nationwide, about half have fewer than 10 flood insurance policies each. A balance must continually be struck between the equitability of giving equal attention to all communities and the cost-effectiveness of devoting more resources to the communities with the greatest number of policies (thus protecting the financial stability of the National Flood Insurance Fund).

Number of communities vs. amount and growth of flood risk—Many communities have little development at risk and are experiencing no or very slow growth, while others face enormous risk to millions and even billions of dollars of property, increasing yearly. Cost-effectiveness in distributing scarce resources dictates that more attention be given to the communities with higher flood risk and the potential for additional development at risk in the future.

Present vs. future—Although the focus of community compliance operations tends to fall on existing violations, in the long run, focusing on yesterday's mistakes may not be as important or cost effective as preventing tomorrow's. This is particularly true because one of the NFIP's ultimate goals is to minimize the amount of property and people at risk over time.

Cooperative approach vs. penalties—The cooperative approach used by the NFIP compliance program is cost-effective and successful in achieving compliance from most communities. However, for certain communities and in certain circumstances it does not work well and a stricter stance, utilizing penalties, is needed. Incorporating both options—cooperative approaches and penalties—in a single program using the same personnel is a daily challenge.

Costs to a few communities vs. benefits for all—One of the main purposes of the NFIP is to shift the costs of flooding away from the federal taxpayers and onto those who choose to bear the risks of flooding. This goal is sound in theory but in implementation poses dilemmas. Imposing the ultimate sanction available under the NFIP compliance program—suspending a community from the NFIP and thus depriving its residents of flood insurance, federally backed mortgages, disaster relief, and other benefits—is a good example of this tradeoff. The difficulty inherent in imposing costs on the few to benefit the many is an ongoing conflict.

The Nationwide Level of Compliance

This study on community compliance and the companion study on building compliance (Mathis and Nicholson 2006) have made some progress in quantify the extent to which communities and buildings have been meeting the NFIP's flood loss reduction standards—a

measurement that has never been made in the 35 years of the NFIP's existence. Producing comprehensive and fully reliable statistics on community-level compliance has proven problematic, however.

In lieu of a costly and time-consuming independent assessment of a random selection of communities nationwide, the study team attempted to use existing compliance data to generate an estimate of nationwide levels of community compliance. A number of ways of analyzing existing information, using proxies, or combining existing data with new information were considered for this study and ultimately rejected, primarily because existing data (which is predominantly housed in the CIS) had been demonstrated to be insufficiently reliable for this purpose.

However, by making a series of assumptions about the representation of visited communities, the length of time that is reasonable for a community to take to remedy noncompliance, and the accuracy of community visit data entered into the CIS over a five-year period, the study team derived an estimated nationwide rate of community compliance of 70 to 85 percent. In this determination a community was considered to be compliant if it had no program deficiencies or violations or if it addressed them satisfactorily within two years. As another way of gauging overall community compliance, FEMA and state personnel were asked in interviews to give estimates of the proportion of compliant communities in their "territories." Their responses ranged from 0 percent compliant for some areas to 100 percent for others, but averaged to 78 percent compliant, the median of the range calculated from existing records.

The other part of the overall picture of nationwide compliance with the NFIP is the extent to which individual structures in flood-prone areas meet the NFIP building standards. Mathis and Nicholson (2006) found that 63 percent of buildings are fully compliant with the NFIP and that 89 percent of the buildings are properly elevated, the most important factor in preventing flood damage.

What these figures convey is uncertain. It is unrealistic to aspire to 100 percent compliance in every community 100 percent of the time, and the funding provided for NFIP compliance falls far short of providing any level of effort that could even attempt such an achievement. Yet there has been no indication from Congress or FEMA of what level of nationwide community compliance is optimal or acceptable. Further, noncompliance at the community level may or may not result in noncompliant buildings and thus increased flood risk and costs to the NFIP, depending on other factors, so this correlation could not be quantified. Nor was this study's method able to connect directly the level of community compliance during a given period with claims data or loss model results to provide an estimate of the effect of noncompliance on the actuarial soundness of the NFIP. Thus it is not at all clear whether these figures on both community-wide compliance and the compliance of individual structures imply the need for drastic improvement or cause for satisfaction.

Promotion of Compliance

Of the three components of the NFIP compliance model, FEMA and its state partners put the vast majority of their resources and effort into *promoting* community compliance, largely through training and technical assistance to community staff and officials. This emphasis is appropriate for a model based on a cooperative enforcement approach and has been effective in

helping most communities achieve and maintain compliant programs. These promotional tools are not as effective as they could be if there were more resources for both FEMA and the states to increase staff levels and travel support, and to produce and deliver more workshop and training materials. It bears remembering that promoting compliance through these educational efforts must be continual, because of local and state staff turnover and because of increases in development pressure and other on-the-ground changes in communities and in their flood risk.

Monitoring

Information about and documentation of what is happening on the ground are essential to achieving community compliance, and are obtained through the *monitoring* phase of the NFIP compliance program. This study has shown that the NFIP's monitoring approach functions fairly effectively for purposes of detecting individual community needs for additional promotion of compliance (technical assistance and education) but not for detecting all the compliance problems that need to be addressed through additional technical assistance or possibly enforcement action. On average, each year no more than 10 percent of NFIP communities receive a monitoring contact—and that proportion is achieved only by using all available resources in both the FEMA regional offices and the states. Only about half of those contacts are comprehensive evaluations (including a site visit) of a local program. This frequency is not enough to detect noncompliance and address it before the potential flood damage is increased, and falls far short of the goals FEMA has stated in its manual for conducting community visits, of contacting every community at least once every five years.

The study found two weaknesses in FEMA's Community Information System (CIS) database—the agency's system for documenting and cataloging both the information that it generates from its own monitoring activities and that which it obtains from other sources for purposes of monitoring. First, the CIS records on community contacts and visits are incomplete because there is a backlog of data that has not been entered into the system by some states and FEMA regional offices. Second, the software that enables the data to be searched and compiled is inflexible and of limited usefulness for many types of analyses that could otherwise be based on the CIS data. The study found that many FEMA and state personnel were not using the CIS for monitoring purposes.

While this study was being conducted, the CIS was being transferred to a web-based system, which was expected to remedy the prior difficulty in remotely accessing the system, which had been a key contributor to the deficiencies in data and perceived usefulness of the system that were reported during interviews conducted by the study team. Because this important transition occurred while the study was in progress, conclusive findings about the effectiveness of the CIS for monitoring compliance were not possible. The CIS database has the potential to be a strong monitoring and evaluation tool, however, if the two above deficiencies are addressed and the access problem has been remedied. Hard and accurate documentation of the number of community contacts, visits, technical assistance responses, staff in training sessions, correspondence, and other activities will help answer questions about the level of overall compliance and the effectiveness of the methods being used to achieve it that could not be answered during this study.

Enforcement

The strongest community-wide *enforcement* sanctions available under the NFIP (probation and suspension) have been applied relatively few times. Formal threats of probation in the form of probation letters have been issued 104 times in the history of the NFIP; probation has been imposed 49 times; and 10 communities have been suspended for failure to enforce their ordinances. It is notable that, for the times that FEMA has formally threatened and/or imposed probation, compliance has been achieved in 85 percent of the cases.

There are few, if any, programs sufficiently similar to the NFIP from which to draw a “norm” of frequency with which enforcement sanctions or penalties should be applied to be most effective. However, research on compliance and enforcement has demonstrated that the presence of a credible threat of a penalty is useful and perhaps even necessary to achieve the highest possible levels of compliance, even in cooperative enforcement models. This is borne out by the compliance history of the NFIP, which shows that some communities are recalcitrant and appear to respond only to a serious threat or the imposition of a penalty but also that, as noted above, when the threat and/or penalty is imposed, compliance does result. However, there is a widespread perception among FEMA and state staff (and perhaps among communities) that FEMA is highly unlikely to apply sanctions in most cases. In addition, interviews revealed considerable dissatisfaction among floodplain management professionals with FEMA’s relatively infrequent use of its two strongest enforcement tools.

In exploring why the sanctions are not applied more frequently, this study found that there are numerous real and perceived internal obstacles to the imposition of probation (the first sanction). Under the NFIP model (as implemented), the bulk of resources and effort are devoted to providing a range of technical assistance services to communities and their staffs. This has created a climate in which services and guidance are readily offered and accepted but a stricter, enforcement-oriented approach layered on top can be an awkward fit. This is particularly true because the same personnel are expected to carry out both technical assistance and enforcement functions, and was borne out in interviews with FEMA and state personnel. This results in a protracted movement from one phase (providing technical assistance) to the next (imposing the probation penalty) whereas the research suggests that a short, swift movement into a sanctions phase is needed to induce compliance. Other obstacles to the imposition of probation include confusion about the amount and nature of documentation required, possible political pressure,¹ turnover in personnel, and shortage of staff time to give proper attention to the problem.

The Roles of FEMA and the States

The roles of FEMA regional offices and state offices overlap in all three approaches to community compliance in the NFIP, although certain tools are used more by the states and others more by FEMA.

The study team concluded that, in its complex staffing allocations, FEMA has appropriately balanced the need to have a presence (at least seven full-time-equivalent positions) in every region with its limited resources and with the variability among regions in the amount of current and expected compliance work. Nevertheless, officials in most of the regional offices

¹ The highest official in each regional office, the Regional Director, is a political appointee.

reported that both staff and resources are insufficient to address the needs of the communities and policyholders and to address compliance activities in particular.

The study team encountered comments from regional office staff about being temporarily transferred to non-NFIP related activities, primarily for pre- and post-disaster activities. Disaster response is not an activity envisaged by the National Flood Insurance Act as a use of the flood insurance premiums, which are designated to pay for the NFIP's administrative expenses (including staff salaries). While some of these pre- and post-disaster activities are directly related to NFIP and NFIP staff have an obligation to help where they can during the response to an emergency, use of NFIP staff for other disaster-related activities can detract from their NFIP responsibilities (including compliance). FEMA was unable to answer inquiries about the precise amount of time NFIP staff spend on non-NFIP matters, or the net effect of these reassignments, if any, on the National Flood Insurance Fund.

States play a vital, but varied, role in the management and administration of the NFIP. Besides the statutory requirement that states designate a coordinating office for the NFIP, and the supportive role defined in the NFIP regulations, there is little other formal policy on the states' contribution to the NFIP. The role played by the states today has been created administratively out of the federal government's need for much more on-the-ground assistance than it can provide by itself and also out of the significant capacity states have to interface with the local communities whose implementation is the backbone of the NFIP.

To support state conduct of NFIP compliance activities, funding is provided to the states on a cost-sharing basis (75 percent federal and 25 percent state) through the Community Assistance Program-State Support Services Element. In 2002, funding ranged between \$25,000 and \$250,000 per state, and averaged \$96,000. (Funding levels were increased since then, so that the Fiscal Year 2006 figure is about 40 percent above the 2002 allocation.) Currently all 50 states participate in CAP-SSSE. Many state floodplain management programs rely heavily on this federal funding, so the CAP-SSSE is critical to the promotion, monitoring, and enforcement of community compliance with the NFIP.

However, two deficiencies in the current CAP program prevent it from funding state and local NFIP compliance activities as effectively as it could. First, despite recent increases, CAP-SSSE funding has not kept pace with the state responsibilities and overall demand for flood services, nor does the distribution of funds among states fully account for the need or capabilities within each state. Second, state floodplain management programs are not fully accountable for the completion of compliance activities once they do receive money. There is insufficient emphasis either in the five-year planning or the CAP agreements on the precise activities to be carried out, how those activities are expected to improve compliance, and whether (at the end of the year's funding cycle) they have resulted in improved compliance. Because states conduct so many of the NFIP-related compliance activities with CAP funds, the absence of measurable compliance goals is a significant gap in tracking or evaluating compliance.

Variations

There was no indication that noncompliant variances are issued on a widespread basis, nor that variances are typically granted to allow a building to be constructed below the required elevation. Biennial report data for two selected years indicated that less than 3 percent of all NFIP communities granted variances for development in the floodplain, although 267

communities did grant variances for 100 percent of the permits that they issued in those two years. A large number of variances in a community does not necessarily indicate noncompliance, but data indicating whether the granted variances met the NFIP criteria were not readily available.

Community Rating System

Monitoring and enforcement in communities that participate in the CRS—a selective sub-program in which communities with exemplary flood hazard reduction programs earn insurance premium reductions for their residents—was found to have some shortcomings. Although admission to the CRS requires demonstration of full compliance with the NFIP and a “clean” community assistance visit (CAV) is now required, 10 percent of CRS communities have not received a CAV (either within the two years before joining the CRS or since joining). Of the CRS communities that have received a CAV, 12 percent (105 communities) had one or more serious program deficiencies identified during the CAV. At the time these data were analyzed 38 CRS communities had compliance problems that had remained officially unresolved for at least 15 months, and some for many years. In addition, some CRS communities have been upgraded in CRS class while officially noncompliant.

These shortcomings are the result of inadequate recordkeeping, confusion within ISO and the FEMA regional offices about their roles and responsibilities, unclear policy on the conduct of routine CAVs for CRS communities, and communication gaps between ISO and FEMA about CRS upgrades.

Substantial Damage/Substantial Improvement

Outside evaluators, several studies, and FEMA are in agreement that the substantial damage and substantial improvement provisions of the NFIP are not being implemented to the degree that FEMA had intended. However, this evaluation was not able to quantify the extent of noncompliance with this rule. Noncompliance by local officials that was documented was found to result from misunderstanding of the rules, fear of political pressure, and belief that the rules impose a financial hardship on property owners. The timing of the substantial damage determination (immediately after a disaster), a lack of information about damaged structures, and the variety of ways substantial damage and substantial improvement can be calculated further impede compliance with this requirement.

Recommendations

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

- **Increase the number and frequency of CAVs.** It is critical that means be found to increase the number and frequency of community visits. FEMA’s records show that each NFIP community receives some sort of one-on-one contact with state or FEMA floodplain management staff about once in 10 years; only half of those contacts include an onsite visit to the community. This is an insufficient level of FEMA or state presence to maintain the level of monitoring necessary to avert compliance problems.

- **Revitalize the CIS.** One effective step toward improving the community compliance program would be to revitalize the Community Information System. If fully functional, CIS would be a powerful tool both for monitoring NFIP compliance nationwide and for making quantitative assessments of compliance-related issues. The absence of such an information base hampered this evaluation. FEMA must bring the CIS's community assistance records up to date, upgrade the system's reporting/query function, and add certain items to the list of data routinely entered into it. It is also essential to simultaneously rehabilitate the CIS's image among regional office and state floodplain management staff (now that technological obstacles have been overcome) so that they will be motivated to enter records conscientiously and trust the data now accessible through the CIS.
- **Impose probation more readily.** The NFIP community compliance model uses the enforcement sanctions of probation and suspension sparingly. Although this is appropriate given the characteristics and constraints of the NFIP and is successful a large proportion of the time, it has also been demonstrated that a minority of communities are not likely to respond to this approach. For those communities, 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 among FEMA regional office and state staff 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.

Two additional actions, presumably by Congress, would help improve community compliance with the NFIP.

- **Provide more funding and personnel for both federal and state activities.** If higher rates of compliance and quantifiable measures of compliance are desired, additional resources must be provided for those purposes. At present there are simply not enough experienced staff persons (at the federal or state levels) assigned to monitoring and enforcement functions to guarantee that communities are sufficiently monitored, that follow-up actions are taken when compliance problems are discovered, and that data on the whole process are maintained.
- **Clarify the use of flood insurance premium funds.** A related issue is whether—or to what degree—it is appropriate routinely to assign federal NFIP personnel, whose salaries are paid out of the National Flood Insurance Fund, to non-NFIP duties. This can be a drain on already-scarce NFIP resources.

More specific actions that would enhance the operations of the community compliance program are addressed in the body of the report.

1. THE EVALUATION OF THE NATIONAL FLOOD INSURANCE PROGRAM

Floods are the most common natural disaster in the United States. Between 1955 and 2003 floods were estimated to have caused \$98 billion in direct damage to property, crops, and infrastructure, or an average of about \$2 billion each year. In 1972, flood damage exceeded \$4.5 billion; another \$16 billion in damage occurred in 1993² (Pielke *et al.* 2002). The costs in human lives are just as dramatic: each year floods result in about 100 deaths.

Despite the havoc floods cause, they are among the most preventable natural disasters. The majority of floods occur at predictable intervals in defined geographic areas, along coastlines, near riverbanks, and in low-lying areas, most of which have been identified as prone to flooding. Mapping technology; hydrologic and hydrostatic measurement and analysis; building elevation and location; improvements in construction techniques and materials; flood warning systems; structural mitigation projects, such as dams and levees; and temporary flood protections, such as sandbagging, can and have significantly reduced the risk of and damage from flooding.

The National Flood Insurance Program (NFIP) plays a major role in efforts to reduce flood losses. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968 (Public Law 90-448) and subsequently amended it in 1973, 1994, and 2004. One of the Act's primary purposes is to "encourage state and local governments to adopt and enforce appropriate land use provisions to restrict future development of land which is exposed to flood hazard." The NFIP's creation was based on the federal government's consideration of several factors. First, floods are costly to property owners and federal, state, and local governments. Second, despite the federal government's significant investment in structural mitigation, flood losses had continued to increase. Finally, the private insurance industry had found the provision of flood insurance to be uneconomical and did not supply an alternative.

Responsibility for administering the NFIP initially fell to the Department of Housing and Urban Development, but this authority was transferred to the Federal Emergency Management Agency (FEMA), an independent agency created in 1979. FEMA became part of the Department of Homeland Security in March 2003. FEMA's Mitigation Division now manages the NFIP.³

The NFIP's goals can be stated as decreasing the risk of flood losses, reducing the costs and adverse consequences of flooding, reducing the demands and expectations for disaster assistance after floods, and restoring and preserving the natural and beneficial values of floodplains.⁴ To address these goals, FEMA identifies and maps flood-prone communities, promotes floodplain management, and provides flood insurance.

² Figures are in 1995 dollars.

³ The division also manages the National Dam Safety Program, the National Earthquake Hazards Reduction Program, the National Hurricane Program, the Hazard Mitigation Grant Program, the Flood Mitigation Assistance Program, and Pre-Disaster Mitigation authorized by the Disaster Mitigation Act of 2000.

⁴ These outcome goals were reached by a consensus of FEMA and the NFIP Evaluation team in the 2002 *Design for the Evaluation of the National Flood Insurance Program*. The fourth goal is not included in the statute, however. The primary purposes stated in the 1968 Act that created the NFIP were to "Through insurance, better indemnify individuals for flood losses that created personal hardships and economic distress; reduce future flood damages

With the passage of the 1968 Act, Congress authorized the federal government “to identify and publish information with respect to all flood plain areas, including coastal areas located in the United States” that have such areas and then “to establish or update flood-risk zone data in all such areas, and make estimates with respect to the rates of probable flood caused loss for the various flood risk zones for each of these areas.”

The 1968 Act further authorized the federal government to establish and implement “a national flood insurance program which will enable interested persons to purchase insurance against loss resulting from physical damage to or loss of real property or personal property related thereto arising from any flood occurring in the United States.” Flood insurance provides the mechanism by which victims of flooding can be compensated for flood damage. No less important, flood insurance also provides a way for some of the financial burden of flood losses to be removed from taxpayers, such as for federal disaster assistance and casualty loss deductions under federal income taxes. Property owners can purchase flood insurance directly from the NFIP or, more typically, from private insurance companies (referred to as Write Your Own or WYO companies). These companies collect premiums, retain a portion of these premiums, for expenses and claims payments, and then submit the remaining premiums to the National Flood Insurance Fund.

The National Flood Insurance Fund was established within the U.S. Treasury by the 1968 Act as the funding mechanism of the NFIP. Premium income and policy fees are deposited into the fund and program expenses including claims payments, operating and administrative costs, and, since 1986, federal salaries and program expenses such as mapping and engineering. In addition, the NFIP has the authority to borrow up to \$1.5 billion from the Treasury, which must be repaid along with interest. The borrowing authority limit can be (and typically is) increased by the President in years with catastrophic flood losses.

One purpose of the National Flood Insurance Act of 1968 is to “study flood hazards...in order to provide for a constant reappraisal of the flood insurance program and its effect on land-use requirements.” This clear call for evaluation and the fact that the NFIP has never been the subject of a comprehensive evaluation led FEMA to assemble a panel of experts to analyze a series of key issues about the program’s operations and effectiveness.

FEMA, which administers the NFIP and is part of the U.S. Department of Homeland Security, decided to conduct a major evaluation of the program’s performance and goals. In 2000, FEMA contracted with the American Institutes for Research (AIR) an independent, not-for-profit corporation to lead and manage the comprehensive evaluation of the NFIP. The evaluation is this first comprehensive review since the program’s inception. The purpose of the overall evaluation is to develop data and information needed to formulate better policies for floodplain management, risk assessment, and insurance, and to support long-term planning and policymaking for the NFIP.

The evaluation examines many issues related to the NFIP, such as the program’s actuarial soundness, its developmental and environmental impacts, and compliance among participating communities with the NFIP’s requirements. The ultimate goal of the evaluation is to contribute

through State and community floodplain management regulations; and reduce Federal expenditures for disaster assistance and flood control” (42 USC 4001).

to improvements in the effectiveness of the NFIP. This substudy within the Evaluation was conducted by the AIR.

1.1 Background on the NFIP

Once a community with flood-prone areas is mapped with a **Flood Insurance Rate Map (FIRM)** issued by FEMA, it may choose to participate in the NFIP's regular program. Participation in the NFIP makes property owners in the community eligible to purchase federal flood insurance and receive other benefits not available in nonparticipating communities. A **participating community** can be any political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction. Examples include a city, a town, a tribe, and a county or parish. Participation in the NFIP is voluntary, although some states require participation. In states that do not require participation, communities can decide whether to enter the NFIP and can choose to withdraw from the NFIP at any time. However, once a community is mapped, it has one year to decide whether to participate in the NFIP before it is designated a nonparticipating (sanctioned) community. A community that decides to participate must adopt and agree to enforce a flood hazard reduction ordinance that meets the minimum criteria set out in the NFIP regulations at 44 *CFR* 60.3.

Property owners in **nonparticipating communities** are not eligible for flood insurance under the NFIP (although they may be able to secure flood insurance from private companies) and, if they are sanctioned, are ineligible for federal financial assistance for the acquisition or construction of structures in their identified flood-prone areas. This includes many loans or grants from the Small Business Administration, the Veterans' Administration, and the U.S. Department of Housing and Urban Development, among others. Finally, nonparticipating communities are not eligible for federal financial assistance for the permanent repair or reconstruction of insurable buildings in an SFHA after a presidentially declared flood disaster.

The identification and management of flood-prone areas under the NFIP is founded on the **base flood**—that flood that has a 1 percent chance of being equaled or exceeded in any year. This is also commonly referred to as the 100-year flood, or the flood that has a statistical probability of occurring once every 100 years. The 1 percent annual chance standard and the 100-year flood are synonymous.⁵ The **base flood elevation (BFE)** is the level of the water's surface during the 1 percent annual chance flood. If a base flood occurs, water would reach the BFE (assuming that the BFE had been determined correctly and that no subsequent changes had occurred in the area's topography or natural conditions). The BFE varies among communities and within them and also can change—the base flood will reach a higher level if development gradually encroaches on the drainage area. BFEs are established and depicted on the FIRM for the flood-prone area. The NFIP requires that new (and substantially improved) construction be built so that the lowest floor is at the BFE (nonresidential buildings have the option of being floodproofed to that elevation). Participating communities incorporate this and other NFIP standards into their local ordinances, but may adopt stricter standards than those required by the NFIP if they wish.

⁵ For more on the base flood and associated policies and practices, see the companion substudy, *Assessing the Adequacy of the National Flood Insurance Program's 1 Percent Flood Standard*.

Substantial improvement is the term applied to any reconstruction, rehabilitation, addition, or other improvement to a building, the cost of which equals or exceeds 50 percent of the market value of the building before the improvement.⁶ A related term, **substantial damage**, refers to damage to a building of any origin whereby the cost of restoring the building to its pre-damaged condition is equal to or exceeds 50 percent of the building's market value before the damage occurred. Substantially damaged or substantially improved structures must be brought into compliance with the same requirements that apply to post-FIRM structures.

The **Flood Insurance Rate Map (FIRM)**, which participating communities must officially adopt as part of their floodplain management ordinance, identifies the **Special Flood Hazard Areas (SFHAs)** in the community. The boundaries of the SFHA correspond to the limits of the 1 percent annual chance flood. Floods can be larger or smaller than the 1 percent flood. Smaller floods, which have a greater probability of occurrence, in theory should never exceed the boundaries of an SFHA. In contrast, a lower probability flood larger than the 1 percent flood will always rise above the BFE and extend beyond the SFHA, unless human intervention prevents this from happening.

There are three key elements in the determination of flood insurance rates in a participating community. First, the FIRMs identify different **flood zones** depending on the flood risk, which is calculated through engineering analyses. Areas within SFHAs include A and V zones, which would be inundated by the 1 percent annual chance flood. All states have A zones. Only coastal states have V zones, which are vulnerable to high velocity water from waves. X zones are outside of SFHAs (but may still be vulnerable to floods that exceed the BFE). All else being equal, insurance rates in V zones will always be higher than rates in A zones. About 68 percent of federal flood insurance policies are for properties in A zones, and another 2 percent are for properties in V zones. The remaining policies are for properties outside SFHAs.

A second element in the determination of insurance rates is the date a building is constructed. The NFIP makes a distinction between what it labels **pre-FIRM** and **post-FIRM** construction. The former includes all construction or substantial improvement that started on or before December 31, 1974, or before the effective date of a community's FIRM, whichever is later. All other construction and substantial improvements are post-FIRM. A participating community's ordinance must require (and the community must enforce) that such construction within SFHAs meet or exceed the NFIP's minimum building requirements in effect at the time construction begins. What constitutes pre- and post-FIRM construction varies among communities, depending on the date of a community's FIRM. As an example, Alexandria, Virginia, has a FIRM dated May 8, 1970, so all construction in the city's SFHA after that date is considered post-FIRM. In contrast, all construction in Live Oak County, Texas, before November 19, 2003 is pre-FIRM because its FIRM did not become effective until that date.

⁶ Substantial improvement does not include work to correct existing violations of local or state health, safety, or sanitary codes or alterations to an historic structure as long as the alterations do not preclude the structure's continued designation as historic.

A Statistical Portrait of the NFIP

Slightly more than 20,000 communities in the 50 states, American Samoa, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands participated in the National Flood Insurance Program as of September 30, 2004. A community can be a state, any of its political subdivisions, and Indian tribe, or Alaska Native village that has the authority to adopt and enforce floodplain management regulations within its jurisdiction.

Given the variety of governmental structures among the states, the distribution of communities is not evenly spread among the states or even dependent on the population of these states. Three states, Pennsylvania (with over 2,450 communities), New York (1,464), and Texas (1,110) account for about 25 percent of all participating communities. In contrast, California, the state with the largest population, has 518 participating communities. Hawaii (4), Alaska (30), and Nevada (31) have the fewest participating communities.

Most flood-prone communities participate in the NFIP, and their residents had about 4.5 million policies in force as of September 30, 2004, with total coverage exceeding \$722.7 billion. The total premium paid to obtain this coverage was \$1.95 billion.

Five coastal states, Florida, Texas, Louisiana, California, and New Jersey, account for nearly 70 percent of all policies. These five states plus five other coastal states account for 81 percent of all policies. Floridians have about 41 percent of all policies – but more than half of these policies are in 20 of the state’s 437 participating communities. Outside of Florida, the median policy count per community is eight, but this number disguises the fact that many communities have no policies. Among participating communities, for example, 3,452 had no policies in August 2004. Almost two-thirds of the 20,000 communities in the NFIP have 20 or fewer policyholders.

At the opposite extreme, the unincorporated areas of Dade County, Florida have the most policies, more than 209,200, followed by Houston, Texas (99,200 policies), Jefferson Parish (88,000 policies) and, New Orleans, Louisiana (85,200 policies), Lee County, Florida (81,000 policies), and Harris County, Texas (72,100 policies). One percent of participating communities have almost 65 percent of all policies. Miami Dade County alone has more policies than the combined total of policies in more than 16,760 other participating communities.

Communities also vary by the type of flood hazards that they contain and relative flood risk. As of September 30, 2004, slightly less than 2 percent of NFIP policies in force were in V Zones, about 68 percent were in A Zones, and the remaining 30 percent were in other zones, primarily those outside of SFHAs.

In general, pre-FIRM insurance rates are subsidized because theoretically at the time of construction the community and property owner had no way of knowing what the flood risk would be at that site and thus how to protect the building by elevating it or other means. In contrast, the post-FIRM policy rates are based on actuarial determinations of the flood risk. Even though pre-FIRM policies are not charged an actuarial premium, the premium is still generally more expensive than those charged post-FIRM properties.

The third element of insurance rating (for post-FIRM construction) is the **elevation** of the building in relation to the BFE. Buildings that are situated at or above the level of the BFE are at less risk than buildings below BFE and therefore have insurance rates commensurate with that risk. The farther below BFE a building lies, the higher its flood insurance rate will be.

Under the ordinance adopted by the community pursuant to NFIP standards, when buildings are constructed within the SFHA, professional surveyors must sign, seal, and certify **elevation certificates**, which specify the elevation of the lowest floor of a building's lowest enclosed area.⁷

1.2 Evaluating Compliance with the National Flood Insurance Program

The NFIP's success is based on two contingencies. 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—insurance that is not readily available through the commercial insurance market but is crucial to protecting property from loss.

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 flood-prone areas actually does meet the local (and NFIP) standards and thus is protected from future flood damage. There are numerous requirements for protecting buildings and infrastructure (addressed in detail later in this report), but those related to elevation are the most easily recognized and useful for illustration. For construction in A Zones, for example, residences must be built so that their lowest floor (including basement) elevated to or above the BFE. Nonresidential structures in SFHAs can be either elevated or dry-floodproofed. In V Zones (coastal floodplains that have the additional hazard of storm waves), buildings must be elevated on piles and columns so the lowest horizontal structure member is at or above the BFE.

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 those building standards and others, then 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 can be 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

⁷ An area used solely for parking of vehicles, building access, or storage in an area other than a basement is not considered a building's lowest floor.

extent and nature of compliance and noncompliance is an important element of any assessment of the NFIP.

An Evaluation of Compliance with the National Flood Insurance Program was performed in two parts, one by AIR and one by Dewberry. *Part A: Achieving Community Compliance*, addressed in this report, assesses the processes for ensuring community compliance with NFIP regulations and pertinent legislation. The areas of inquiry include the NFIP’s approach to training and technical assistance, the effectiveness of tools for monitoring community compliance and defining and remedying violations, the roles of FEMA’s headquarters and regional offices, and state floodplain management offices in supporting the NFIP, the capabilities of communities to identify and address violations and the application, appropriateness, and effectiveness of sanctions for noncompliance.

Part B: Are Minimum Building Standards Being Met? was prepared by Dewberry under subcontract to AIR, and quantitatively assessed the compliance of post-FIRM buildings—both insured and uninsured in SFHAs—with the NFIP’s floodplain management regulations, especially those related to construction standards. That study estimates, within the areas selected, which floodplain management regulations have the highest and lowest rates of compliance and characterizes levels of compliance by type and size of community, geographical area, foundation type, occupancy, building type, and similar factors.

By dividing the topic of compliance into two interrelated parts, AIR distinguishes between the processes and organizations that support and enforce compliance with NFIP standards and the actual compliance or noncompliance of the millions of buildings across the United States that are required to meet NFIP construction standards. The disparate forms of analysis for the two components of NFIP compliance necessitated two studies, but they are interrelated and findings from both are incorporated and cross-referenced in both reports when appropriate.

Despite FEMA’s efforts to monitor communities’ compliance, the level of compliance had been unknown for many years. In *Sharing the Challenge*, the Interagency Floodplain Management Review Committee (1994) observed that “many communities are not enforcing their [floodplain management] ordinances adequately, often because they do not understand the program requirements or the long-term benefits of reducing flood damage.” Pasterick (1998) noted that the “NFIP compliance process has identified a number of violations of program standards at the local level...” He also observed “there has never been a comprehensive assessment of the level of compliance nationwide.”

This evaluation is intended to fill that gap, at least in part, with the dual studies focusing on both the extent to which local floodplain management programs meet the NFIP standards (Part A, described in this report) and the compliance with those standards of the buildings that are constructed within those jurisdictions (Part B, described in Mathis and Nicholson 2006).

1.2.1 The Community Compliance Process and Model

Although the NFIP is a national program, its implementation takes place at the community level. The process begins when FEMA conducts an engineering study of the flood hazard in a community and produces a flood map for the community based on that study. To participate in the NFIP, the community must adopt and agree to enforce a floodplain

management ordinance to manage the flood hazards depicted on the map according to standards set out in the NFIP regulations (or higher standards). In exchange for a community's commitment to regulate its floodplain, FEMA declares its property owners eligible to purchase flood insurance through the NFIP.

Some states require communities to meet requirements more stringent than the NFIP's minimum requirements and, in these cases, the state requirements take precedence. Communities also may choose to have more stringent standards for themselves. To remain in good standing with the NFIP and thereby maintain the availability of flood insurance for its residents, a community must remain "compliant" with the NFIP standards.

To be compliant with the NFIP, a community must fulfill responsibilities in two major categories: its program must operate in accord with NFIP requirements, and the structures built and development carried out within its jurisdiction must individually meet NFIP requirements. The NFIP regulations at 44 *CFR* 60 list and provide details on the program, construction, and other standards, but for purposes of discussing community compliance, the requirements are generalized in the list in figure 1.

There are numerous additional details associated with these requirements and their applicability, which are not discussed here. For example, the construction rules apply only to structures built after the community received an official FIRM (called post-FIRM structures). Structures built before the map was adopted (pre-FIRM structures) are not subject to the rules. However, pre-FIRM structures must be brought to post-FIRM standards when they suffer damage equal to or greater than half the value or replacement cost of the structure (called substantial damage), or when they are improved at a cost equaling or exceeding 50 percent of the building's value or replacement cost (called substantial improvement).

When a community joins the NFIP, its ordinance is reviewed to be sure it meets the NFIP standards. After that, participating communities are contacted and visited periodically by staff of the FEMA regional offices or the state floodplain management office, to provide the local staff and officials with any technical information and guidance they may need to administer their local ordinance effectively and run a program that meets NFIP requirements and results in buildings and development that also meet those requirements and thus are protected from flood damage.

If and when FEMA or state staff discover that a community's program is not meeting NFIP standards and/or that there are buildings or other development in the community that are in violation of the community's ordinance, the community is required to take corrective measures, with assistance and guidance from FEMA and the state. Communities that do not correct deficiencies in their programs and remedy the violations after a suitable amount of time and assistance can be placed on probation and ultimately suspended from the NFIP, resulting in the loss of flood insurance for their residents. Suspended communities can be reinstated after addressing their compliance problems.

FIGURE 1: Basic Components of Community Compliance with NFIP Requirements

- Floodplain management ordinance, regulations meet NFIP criteria
- Administration, inspection, and enforcement procedures effective
- Engineering review and support adequate
- Other community measures (land use plan, building code, zoning, etc.) consistent with NFIP standards
- Buildings in flood hazard area elevated to proper level
- Enclosures below base flood elevation restricted
- Openings for entry of flood waters adequate
- Manufactured homes properly elevated and anchored
- Building components (HVAC, utilities) elevated
- Floodway not encroached upon
- Buildings in V Zones anchored on pile/column foundations
- Buildings in V Zone landward of mean high tide

The NFIP Compliance Model

Successful implementation of the NFIP—and the accompanying minimization of flood risk and flood damage—depends heavily on how well local governments administer their ordinances. To help ensure that community programs nationwide are compliant and that violations are minimal, FEMA and the states employ a multi-faceted compliance program incorporating numerous techniques, all with an eye toward building local capability that will alleviate flood damage today and prevent losses in the future as well.

Compliance at the local level can be lacking for many reasons. Noncompliance may be due to staff turnover, local officials’ lack of technical expertise, misunderstanding about what they are required to do, or failure to appreciate the reasons for the requirements and the possible consequences of noncompliance (FEMA 1986, 2002). Similarly, local officials may bend to political pressure because they do not fully understand the purpose of a particular regulation or the possible consequences of not meeting it. On the other hand, noncompliance may be intentional—the result of willful disregard of the NFIP standards and the community’s own ordinance and regulations.

Because FEMA has no written description of the model that underlies its compliance program, the study team characterized the implicit model for purposes of this evaluation, based on the agency’s preferred approach and comparisons to other governmental models of compliance. In the study team’s depiction, the NFIP program for community compliance has three broad components: (1) promotion, (2) monitoring, and (3) enforcement. These are the three main approaches FEMA and the states use to try to achieve full compliance with the NFIP standards, nationwide. The word “promotion” is used here to encompass all the activities that are geared toward informing and educating appropriate people, in appropriate detail, about the NFIP, its standards, and the reasons for and benefits of it. The activities FEMA calls “technical

assistance”⁸ make up a large part of the promotion component of the compliance program. The second approach is here termed “monitoring,” and means the process of collecting information; documenting activities; archiving both the information and documentation; keeping track of activities at local, state, and regional levels; and in general being alert to indicators of possible problems communities may be having in implementation of their ordinances to meet the NFIP standards. The study team uses the term “enforcement” to mean the third component of the model—the process through which FEMA (sometimes in conjunction with the states and the community) takes action to compel compliance through program-authorized sanctions or legal procedures.

Because of the technical nature of the program and the likelihood of its criteria and procedures being misunderstood—particularly in the case of small communities with minimal in-house expertise and in instances of staff turnover—rather than viewing enforcement as the first and only remedy to problems with compliance, FEMA prefers to provide information and education (technical assistance) to address the shortcomings in communities’ efforts before initiating formal enforcement action. FEMA has stated that no community should be suspended from the program unless efforts have first been made to correct the community’s noncompliance through additional training and technical assistance (FEMA 1986). Thus, enforcement sanctions such as probation and suspension are not applied as initial tools in the model FEMA uses. That is, the assumption is that communities are noncompliant due to their lack of understanding of program requirements unless shown otherwise, through continued patterns of problems.

Three basic assumptions are implicit in the NFIP compliance model:

- Most property owners, community officials, and developers will follow the rules and standards once they understand them and the reasons behind them.
- Incentives are more effective than sanctions, although both are necessary.
- Similarly situated communities should receive consistent treatment.

As will be seen, these assumptions have helped to shape the focus and emphasis of the NFIP compliance program as administered by FEMA. They are in keeping with similar assumptions underlying some other governmental enforcement models.

Each of the three components of the NFIP community compliance program (promotion, monitoring, and enforcement) is supported by several techniques or “tools” that are used to achieve success at that approach (figure 2). Some tools support more than one approach to achieving compliance, and the distinction among approaches is not necessarily a sharp one. It should also be noted that the approaches can be applied simultaneously and are mutually supportive. In this evaluation, each of the tools is examined separately in order to assess its effectiveness. This framework uses terminology and techniques similar to those used by the compliance and enforcement systems found in other governmental programs.

⁸ Technical assistance takes many forms, including phone and other contacts with NFIP communities, visits to communities, the issuance of procedural guidance, development of technical publications, and responding to inquiries.

One way of visualizing the compliance process is to begin at the left and move to the right along the top of figure 2. If one assumes, as FEMA does, that the central problem faced regarding compliance is of awareness an understanding of complicated rules and that most communities and property owners will meet the standards voluntarily when they become aware of them, putting the bulk of program effort and resources into promoting compliance may be a proper program design. In this model, the second component, monitoring, is simply a vehicle for determining whether and where the promotional work was successful and for injecting additional promotion (in the form of technical assistance or training, for instance) for communities in need or on issues that appear to be problematic. The third component, enforcement, covers the situations in which promotion was found (through monitoring techniques) to be unsuccessful (resulting in continued compliance problems) and additional promotional effort by FEMA and/or the state did not result in resolution of the problems. Besides addressing the recalcitrant communities, the enforcement component, when employed properly, is presumed to serve as a deterrent to noncompliance among other communities.

FIGURE 2: The Program for Achieving Community Compliance with the NFIP

	<i>Approaches/Components</i>		
	Promoting Community Compliance	Monitoring Community Compliance	Enforcing Community Compliance
<i>Tools</i>	Training Technical Assistance (community assistance contacts, community assistance visits, procedural guidance, technical publications, response to inquiries, other) Professional Certification Incentives (insurance availability, insurance rating structure, CRS discount, ICC coverage) Disincentives (loss of insurance availability, insurance rating structure, denial of insurance coverage (1316), denial of flood disaster assistance)	Community assistance contacts and Community assistance visits, meetings Community Rating System procedures Community Information System (and data contained therein) Submit-for-Rate Procedure Letters of Map Revision based on Fill (LOMR-Fs) Complaints from citizens and others	Correction of Program Deficiencies (performed by community) Remediation of Violations (performed by community) Section 1316 Declaration —for individual structure violations (declaration by community; insurance denied by FEMA) Legal action against owner of individual structure (pursued by community, state) Subrogation against community and/or individual (pursued by FEMA) Probation (imposed by FEMA) Suspension (imposed by FEMA)

These three components generally are viewed as essential to the process of achieving compliance and are found in varying forms in most regulatory programs. The extent to which one should be used over another depends upon the assumptions underlying the compliance efforts, the goals in terms of compliance, and the current compliance situation. If one of the components or tools is found to be extremely weak, it is possible that the whole program may be undermined. On the other hand, it may be that other tools compensate for the weakness, resulting in minimal impact from one flawed area. Further, the right mix across these components may change over time.

Constraints and Trade-offs in NFIP Compliance

The NFIP compliance program operates, as any government program does, under certain constraints and must continually make tradeoffs to achieve an appropriate balance among competing objectives, approaches, and perspectives. Two constraints are paramount: statutory limits and finite resources.

In passing the National Flood Insurance Act, Congress set out a scheme for the NFIP that entailed preserving local authority by assigning the bulk of implementation of the program to the local level, with minimal administrative oversight from the federal government. Sensitive to the specter of “unfunded federal mandates” and mindful of the federal scheme of government, both the Congress and FEMA have shaped the program to emphasize the benefits to local governments and their residents and to provide technical support for locally based implementation. For the compliance program of the NFIP, this has meant that there has been no development of a large contingent of inspection personnel armed with a variety of penalties to buttress a heavy-handed enforcement role for FEMA. Instead, the program relies on various forms of support to local governments (funding, training, specialized assistance), along with incorporation into the program of financial and other incentives, and a preference for allowing autonomous localities to develop over time a capacity for proper implementation. This is an understandable approach in a federal system where the federal government has no land use authority.

As with most governmental programs, funds for NFIP compliance are limited. The number of FEMA personnel dedicated to the NFIP nationwide is small (less than 150 in 2003) given the more than 20,000 communities whose compliance with the NFIP criteria must be assured. Since 1986, administrative and operating expenses for the NFIP, including staff salaries, have come out of the funds generated by insurance policy premiums and fees. Although this protects NFIP staff to some extent from government-wide budget cuts, it also provides a ceiling for resources.

A number of conflicting factors that affect the NFIP compliance program must continually be balanced by the NFIP headquarters and regional staff:

Number of communities vs. number of policies—There are about 20,000 communities participating in the NFIP nationwide, but about half of them have very few flood insurance policies (fewer than 10 per community). While FEMA’s stated policy regarding compliance is that “no NFIP community [should be] overlooked” (FEMA 1989, p. 1-4), cost-effectiveness in distributing scarce resources and protecting the Flood Insurance Fund would dictate that more attention be given to the communities with more policies.

Number of communities vs. amount and growth of flood risk—Many communities have little development at risk and are experiencing no or very slow growth, while other communities have enormous risk to millions and even billions of dollars of property, increasing yearly. Again, cost-effectiveness in distributing scarce resources would dictate that more attention be given to the communities with higher flood risk and the potential for additional development at risk.

Present vs. future—When assessing community performance of its duties under the NFIP compliance program, the focus tends to fall on existing violations. The NFIP's ultimate goals are long-term, however: to minimize the amount of property and people at risk over time. Because the nation is growing and development is constantly shifting from one area to another (towards the coasts in the last few decades, for example), local capacity to cope with increasing flood risk must be cultivated. Further, the cost of preventing future problems in terms of development should be lower than the cost of mitigating past mistakes. Thus, in the long run, focusing on yesterday's mistakes may not be as important or cost effective as preventing tomorrow's. This suggests that the benefits of pursuing an approach in which supplying a community with further education and guidance to avoid future missteps may be more cost effective than penalizing it for past errors, again assuming most problems were caused by error rather than willful misconduct.

Cooperative approach vs. penalties—An assumption underlying the NFIP compliance program, as noted above, is that most people and local governments will meet the required standards once they are aware of them. As has been revealed in prior research on enforcement schemes (discussed below), this assumption holds true in some circumstances and not in others. For the majority of communities, as will be seen throughout the discussion in this report, the cooperative approach used by the NFIP compliance program is effective in achieving compliance and at comparatively low cost to the federal government. However, for certain communities and in certain circumstances, it does not appear to work well and in those instances a stricter stance, utilizing penalties, appears necessary. In some instances, optimal ways to reach compliance are less clear cut. The difficulty lies in attempting to incorporate both options—cooperative approaches and penalties—in a single program and in establishing thresholds and processes to clarify when individuals in charge of enforcement should use one rather than the other.

Costs to a few communities vs. benefits for all—One of the main purposes of the NFIP is to shift the costs of flooding away from the federal taxpayers and onto those who choose to bear the risks of flooding. This goal is sound in theory but in implementation poses dilemmas. Imposing the ultimate sanction available under the NFIP compliance program—suspending a community from the NFIP and thus depriving its residents of flood insurance, federally backed mortgages, disaster relief, and other benefits—is a good example of this tradeoff. Given the prolonged and painstaking process FEMA follows to try to avoid suspending a community, any community that is suspended for failure meet the NFIP standards is likely to have earned its penalty. Further, were a disaster to strike that suspended community, the political and public pressure to provide federal relief and support despite the community's status as a non-player might be irresistible. This would undermine one of the stated goals of and motives underlying the program. Further, whether the intangible deterrence effect of imposing suspension (or other sanctions) is worth the negative publicity and political pressure that would accrue to FEMA is a constant consideration.

1.2.2 Previous Research on Compliance and Enforcement Models

The study team examined both the literature on compliance and other government agencies and programs in search of compliance models that could be used as a basis for comparisons to the NFIP compliance program model. The structure of the NFIP is complicated, however, making comparisons difficult. The NFIP involves a combination of underlying characteristics and assumptions that was not duplicated in any other program encountered by the study team.⁹ These factors include

- A widely supported public-interest goal (reduction of flood disasters);
- Shared implementation (federal, state, and local governments all have roles);
- A combination of governmental and individual or corporate (builders, developers, insurers) behavior involved in and affecting compliance;
- Signals of risk (flood risk) that are infrequent, sometimes ambiguous, and difficult to interpret;
- Considerable diversity in local-level conditions and thus in the ordinances and programs to be monitored;
- Changes (sometimes frequent) in personnel responsible for the entities being regulated (communities), along with repeated interactions over time between those being monitored and those doing the monitoring; and
- Political pressure that inhibits the ability to impose strict community-wide penalties.

The social science literature does provide insights that aid in an examination of certain aspects of the NFIP's model. The literature cannot provide definitive answers, however, about the efficacy of the NFIP model compared to other programmatic models overall, nor to the value of switching to a different approach.

The academic literature on compliance is tied to that on deterrence, and generally can be grouped by the level of subject, including compliance of individuals with government rules, compliance of corporate entities with government rules, and compliance of governmental entities with the standards of other governmental institutions. The NFIP exhibits a complicated federal model of delegated monitoring in which compliance is required both between the property owners or individual developers and local governments as well as between communities and either state or federal agencies. Most theory and research do not consider federal models explicitly but, again, considering one level of the NFIP model at a time (e.g., government-to-government) makes it possible to glean lessons from the research.

There has been a sizeable amount of research on governmental monitoring of individuals, focused primarily on criminal behavior with regard to the tax code. This research demonstrates,

⁹ Note that some of these factors are shared by other government programs (the National Pollution Discharge Elimination System, administered by the U.S. Environmental Protection Agency, for one), but no program the study team found had all of these characteristics.

for example, that tax crimes are reduced when penalties and the probabilities of delivering penalties to violators are increased (Zimring and Hawkins 1973; Gibbs 1975; Tittle 1980). The research on inter-governmental institutions is more pertinent, however, because that is the basis of the NFIP model.

Research on inter-governmental monitoring and compliance in the United States is dominated by research on Congressional monitoring of the executive branch of the federal government rather than on national governments monitoring state or local governments. That is, much of the literature focuses on organizations and individuals operating as direct agents of the “principal”; fewer studies examine the difference in compliance that results when “agents” are independent entities (as communities are) that do not exist solely to achieve the principal’s (NFIP’s) mission. Most theoretical work has considered simplified models whose components can be delineated clearly, and most empirical research focuses on governmental entities that lack the complexity of the NFIP. This review focuses on only that theory and research most relevant to the NFIP’s model and on the possible applicability of alternate models.

The early research on the “principal agent” theory focused on deterrence models of enforcement that are characterized by frequent, inflexible penalties backed up by the threat of additional legal action. The deterrence model has been used in governmental issues such as tax enforcement and some environmental regulations where the primary underlying assumption is that compliance cannot be structured in a way that is either (1) incentive compatible to reduce noncompliance, or (2) does not include incentives for “free riders” to benefit from everyone else’s compliance threatening the system to unravel. Scholz (1997) notes that early theoretical work that supported the effectiveness of deterrence models (Becker 1968, Stigler 1970, and Posner 1986) relied on four simplifying assumptions to define the enforcement problem: (1) monitored entities are fully informed utility maximizers; (2) legal statutes unambiguously define misbehavior; (3) legal punishment provides the primary incentive for compliance; and (4) enforcement agencies optimally detect and punish misbehavior, given available resources. None of these assumptions is closely applicable to the NFIP.

One problem with attempting to apply a simplified general deterrence model of compliance to the NFIP is that the underlying assumptions do not accommodate for entities that behave with bounded rationality because of their complicated internal structures (government at any level, for example). The underlying assumptions of such a general model also do not accommodate situations in which rules and behavior are often inherently ambiguous, as they are under the NFIP, or for the potential of imperfect enforcement by agencies. Most of these assumptions are violated for the NFIP at some level, as they are for some other governmental programs. Many of the approaches for enforcement used in the NFIP such as emphasizing use of positive incentives to promote compliance and providing considerable discretion and flexibility to the regulators (regional offices and states) in order to address widely varying situations across the country do not fit the traditional model. There is considerable evidence as well that traditional sanctions can be inefficient deterrents under certain circumstances, including some of those faced by the NFIP (Adler 1983; Ansari 1990; Bachman, Bowers, and Marcus 1968; Rahim and Buntzman 1989; Kanter 1977).

Broadening to other compliance and enforcement regimes, there are three notable areas of research that are potentially relevant to this analysis of the NFIP: error-correction models, cooperative enforcement strategies, and voluntary mechanisms.

Error-Correction Models

When the primary concerns of an enforcement program are unintentional errors that everyone wants to avoid, the error-correction model may be an appropriate general model of compliance to consider. Unintentional errors are most likely to occur when the signs of risk are infrequent and difficult to interpret, as is often the case with flooding, and which involve problematic externalities that are not reflected clearly in economic costs at the time when decisions about risk-coping strategies are made. To reduce these mistakes, the research on this model suggests policy solutions that bolster the self-monitoring and error-correction mechanisms (1) within organizations, (2) by third-parties (insurers, underwriters, etc.), or (3) using public monitors. This research also suggests the creation of redundant error-detection systems (Heimann 1997; Landau 1969; Scholz 1984).

In theory, the frequency of inspections and extent of redundancy should be related to the magnitude of risk to life but, in reality, the costs of the detection systems also plays a role, especially when that cost is considered in light of the magnitude of fears resulting from errors. For example, society tends to prefer higher intensity and redundancy in error-detection systems for high-salience risks, such as airplanes and nuclear plants, than for risks like automobile accidents or non-catastrophic floods, which seem mundane. These social preferences change over time as relative and absolute perceived risks change. In accord with this theory, the NFIP maintains a low level of intensity of error-detection systems and redundancy compared to other threats, even though more people die from floods and more property losses occur from them. This situation is due, in part, to biases toward the high-visibility but low-probability risks (Slovic *et al.* 1977)¹⁰ and the optimistic bias that floods will not happen to oneself (Mileti and Darlington 1995; Mileti, Fitzpatrick, and Farhar 1992).¹¹

The research on error-correction models also indicates that penalties have an effect on compliance, although compliance does not necessarily increase with the size of the penalty. For instance, one study of workplace safety and the regulations of the Occupational Safety and Health Administration indicates that, although penalties do improve safety, the size of the penalty has little effect on the level of improvement (Scholz and Gray 1990). The literature also suggests the importance of cooperation among different agencies or levels of government: for instance, if the agreed-upon technique for achieving compliance in error-correction systems is a threat from a single deterrence-oriented agency at any level may result in lessened cooperation from the organization under scrutiny. Although this work focuses on corporate behavior rather than inter-governmental relations, its findings have direct relevance to the NFIP, in which at least 50 state agencies, FEMA headquarters, 10 FEMA regional offices, and 20,000 communities all share responsibility for community compliance and clearly benefit from mutual cooperation.

¹⁰ As early as 1977, a series of laboratory experiments by Slovic and his colleagues showed that people are willing to accept low probability and high cost risks but protect themselves against more certain risks, even if the cost of such losses would be low.

¹¹ Research indicates that, in general, the public does not perceive the risk of suffering damage or loss from a flood to be high and that most people do not believe that their homes will ever be flooded (Bozell, KRC, and Westhill no date; KRC 1995, 1996, 1999)

Cooperative Enforcement Strategies

One type of compliance program emphasizing an approach that potentially is of greater relevance to the NFIP is cooperative enforcement strategies. These emphasize the ability to scale penalties according to the behavior patterns of the monitored entities, the ability of monitoring entities to use discretion and flexibility in enforcement mechanisms, and a sufficiently empowered enforcement agency to maintain a credible threat of enforcement (Ayres and Braithwaite 1992; Scholz 1991).¹² The assumptions that underlie cooperative approaches are that activity can be monitored or self-monitored successfully and transparently, the organizations being monitored would not gain a significant economic comparative advantage over their competition if they fail to comply, and interactions are repeated over time. The latter assumption is a finding suggested by the prisoners' dilemma problem¹³, in which cooperative solutions can be reached as long as each side expects frequent, long-term interactions. If interactions continue over time, then all parties realize that long-term payoffs based on good-faith effort will outweigh short-term incentives to "shirk."

An example of cooperative enforcement from the NFIP compliance process is that staff members from FEMA regional offices and states have considerable flexibility in working with a community that is having compliance problems. Good faith and hard work on the part of the local staff are routinely taken into consideration when evaluating the community's progress toward remedying its violations. Under the NFIP, the focus during community contacts and visits is on using technical assistance to help the community achieve compliant status rather than threatening to penalize the community if it does not meet the standards. This is based on the assumption that lack of knowledge is the main barrier to compliance and the realization that FEMA, the states, and the communities will be interacting more or less continuously as long as the NFIP endures. The cooperative enforcement model is perhaps the closest fit to the overall NFIP compliance process of all the models the study team examined.

The benefit of cooperative strategies in regulatory enforcement, when the underlying assumptions are met, is that there is a lower administrative and legal burden on the regulating agencies and potentially higher levels of cooperation than with other approaches. This is important to the NFIP, not only because high levels of local compliance are desired but also because of the limited resources available at the federal level to ensure compliance. One empirical research project indicates that deterrence-oriented strategies that use punishments frequently are less effective in reducing workplace injuries than cooperative enforcement strategies that use punishments less frequently in response to cooperation on the part of the regulated community (Scholz 1991).

The cooperative enforcement literature does underscore, however, that compliance initiatives are most effective if they are supported by a credible threat of enforcement action (Cohen 1998; Compliance Information Project 1999; Crow *et al.* 2000). Furthermore, a study by the Canadian group Pollution Probe (1999), which reviewed voluntary initiatives in

¹² Error correction regimes may or may not be cooperative in their approach, so these categories are not mutually exclusive. Regulations and standards that are developed cooperatively between the regulator and the regulated community are a related approach.

¹³ See, for example, Axelrod (1984) for a discussion of the application of the prisoner's dilemma to governance and other applications.

environmental protection and resource conservation, concluded, in part, that these initiatives should have clear targets and timelines with progress measured at regular intervals.¹⁴

One drawback to cooperative enforcement strategies noted in the literature is that enforcement agencies and those regulated have a temptation to take advantage of each other. Inspectors can insist on expensive measures that fulfill all requirements even when overall harm is reduced more by other measures. Those regulated have the advantage of knowing far more than the inspectors about what is actually happening and can disguise their actual level of compliance. They may also discount the cost of being caught if they do not expect continued interaction with the other entities. This concern arises consistently in the environmental policy and some other regulatory arenas. The study team did not uncover the first issue as a central concern for the NFIP, and disguising behavior is not generally cited as a problem for the NFIP either, but the issue of informational asymmetries and complications in effective monitoring is a prominent theme in this study.

The concern for the NFIP suggested in the research on cooperative enforcement strategies is whether the program has the political strength to suspend any given community from the program, its strongest penalty. Some evidence from interviews with state-level NFIP coordinators and other state agencies conducted for this study as well as a related one (Mittler *et al.* 2006) suggests that the perception among state-level representatives that reluctance of some FEMA regional offices to use the probation sanction (which precedes suspension) undermines efforts to achieve compliance when following up community violations. The compliance literature suggests that the trade-off in allowing flexibility across “inspectors” (in the case of the NFIP, the regional offices and states) is that rates of compliance for recalcitrant communities may be lower in regions that do not readily put communities on probation, all else held equal.

This hypothesis is extremely difficult to test quantitatively in the NFIP and in most other cooperative enforcement regimes. First, the test there would have to include a control for the dissimilarities across regions. Second, measuring strategic preemptive behavior and non-events is highly problematic due to the threat of enforcement. That is, it is often hard to discern through data (even if perfectly gathered) the difference between a community that prevents or corrects violations because of the threat of probation and one that does so without such a threat.¹⁵ Brehm (1996) notes that these selection bias issues are “endemic” in researching cooperative compliance where the situation that is observed is generally one of sanctions having been applied after unsuccessful negotiations. Anecdotal evidence from these research efforts provides some support for this contention. In the environmental literature, such as air pollution enforcement, it often is claimed that communications that involve threats to begin enforcement proceedings are easier signals for Congressional overseers (and researchers) to count as effort toward enforcing compliance, but they may be less successful in moving toward compliance than informal threats and discussions with non-compliant companies. The problem of selection bias is ameliorated

¹⁴ Another example comes from an *ad hoc* group composed of both environmental advocacy and industry representatives calling itself the New Directions Group (NDG), which developed both principles and criteria that should underlie both the design and practice of these approaches. Their work stresses that cooperative agreements should be participatory, transparent, and performance based.

¹⁵ For example, formal theoretical approaches to studying Congressional oversight observe that an oversight committee’s apparent inactivity with respect to an agency does not mean the agency exercises complete discretion (McCubbins and Schwartz 1984, McCubbins, Noll, and Weingast 1987, 1989, 1990).

somewhat with the NFIP in that some information is retained about community contacts and visits even when the result of the visit is that no violations or problems are found. Unfortunately, considerable improvements could be made in the recording and cataloging of this information, as discussed in Section 5.2 of this report as well as in Mittler *et al.*, (2006).

Despite this concern, the primary assumptions underlying cooperative enforcement models are supported in the NFIP compliance process, suggesting that the choice of using this strategy within the NFIP may be appropriate and more productive than the less cooperative approach of threatening and using stricter penalties in a majority of the compliance cases.

Voluntary Mechanisms

Another set of research relevant to this NFIP study involves the use of voluntary codes and agreements. The general set of assumptions underlying the set of choice of a system of compliance characterized by voluntary measures is whether expected harm from the behavior is not large and the process of creating mandatory rules is highly burdensome, inefficient, inflexible (especially when technological change is rapid), or politically infeasible (Baggott 1986; Harrison 1999).

Voluntary compliance approaches vary widely. They can include agreements between private organizations, where government merely supports agreements to prevent “free riding”; voluntary agreements directly between an industry and the government to proscribe action (sometimes to avoid direct regulation); or just governmental exhortations or challenges. Voluntary approaches are used throughout the NFIP but are not central to compliance. States may voluntarily require communities to go above and beyond NFIP minimum standards and communities may do so on their own. Many individual property owners voluntarily insure themselves (some are required to purchase insurance as a condition of receiving a mortgage). Communities voluntarily enter the Community Rating System (CRS), a sub-program for exemplary local floodplain management programs. The NFIP has buttressed some of its “voluntary” activities by incorporating financial incentives to induce the desired action.

There is little solid quantitative research on the efficacy of voluntary approaches. Because experience with voluntary approaches has been gained only comparatively recently, few evaluations have been done. In any case, there are considerable obstacles to evaluation of voluntary programs (Harrison 1999). The available research suggests that voluntary approaches can be productive when government can provide incentives such as positive social rewards (e.g., good publicity, as used by the Environmental Protection Agency in its Clean Air Excellence Awards Program) or discounted costs. The NFIP does provide discounts to policyholders in CRS communities. However, political theory suggests that it is most effective to match incentives to the relevant actor, which in this case is the community. In terms of community-level incentives through the NFIP’s CRS, policyholders discounts provide little beyond good publicity for relevant local government officials and programs in exchange for the sometimes high up-front costs to the community for making changes. Thus, the reasons the communities join the CRS are more likely to be related to other factors such as the direct reward to community officials of reducing future risk after previous flooding experiences, and pride in being singled out as having one of the better community-level programs in the country. The literature would suggest that the CRS consider providing the communities themselves a direct incentive—a reduced cost-share in

a flood mitigation project, or funding for community floodplain management programs, for example.

Other Research

The available research on other aspects of compliance has additional limitations that hinder both its application to this study of the NFIP and the study team's ability to consider alternative models. Current research provides few quantitative comparisons of actual rates of compliance in response to different enforcement regimes. The results that are available are in conflict, a result, in part, of the large difference in the types of compliance issues measured (Burby, May, and Paterson 1993; Harrison 1999; Scholz 1991). Nor is there much research on proper responses to declining ratios of the number of those involved in monitoring and enforcing to the number of entities being monitored, as is found with the NFIP over time (federal and state staff levels remain fairly steady while the number of communities and amount of floodplain development grows). Further, the complexity inherent in the many layers of interactions within the NFIP generally is not addressed in formal (mathematical) theoretical models due, in part, to the expected indeterminacy of results with so many players and variables (see McKelvey 1979).

Moe (1985) provided an example of a complicated multi-layer empirical analysis of regulatory agency performance that is perhaps the most relevant to the NFIP. He considered the web of interactions surrounding the performance of the National Labor Relations Board (NLRB) relative to the wishes of its principals. His structural model includes Congress, the President, the courts, various constituencies, and the NLRB staff and its field agents, and is constrained by processes established by the principals and economic conditions. The model is sufficiently different from the NFIP in terms of a compliance system, that the specifics are not directly comparable. Moe found that organization's performance is endogenous to the preferences of *all* parties, not just to the top-most principals (Congress and the President), and the behavior of each principal or actor adjusts to that of the others to create an equilibrium outcome. The outcomes were not simple to predict based on stated goals of just Congress or the executive branch. In addition, the equilibrium tended to be protected by everyone involved, at least in the absence of an external shock to the system.

It also should be noted from the literature that, in regulatory regimes with competing constituencies and interests, often designed with conflicting (or even unstated) goals, less than optimal performance towards any one of those goals can be expected. Further, the process can be changed quickly only with considerable difficulty. The NFIP fits this description to a large extent with its multiple constituencies and the fact that some goals (such as actuarial soundness) can be in conflict with that of proper floodplain management and prevention of flood losses, as discussed in another sub-study of the NFIP Evaluation (Bingham *et al.* 2006). This body of research draws attention to the fact that the NFIP not only exists to serve multiple principals and multiple constituencies, but that its outcomes are difficult to predict based on generic approaches to compliance that are not specific to the NFIP's structure and unique characteristics.

1.2.3 Applicability of Previous Research to the NFIP

In sum, the research does not provide clear answers to the question of what compliance and enforcement models would be most comparable to the NFIP. Indeed, it seems evident that no single standard model can reasonably be applied to the NFIP and, moreover, the research

suggests that there are trade-offs inherent in all approaches. As this discussion reveals, the NFIP in fact uses more than one of the structural elements of compliance models discussed in this section—cooperative enforcement, voluntary measures, incentives, and sanctions. In addition, the NFIP tends to adopt each element when the assumptions appropriate to that element are met and when the tradeoffs suggested in the literature favor the compliance approach taken. The evaluation of NFIP compliance discussed in this report therefore focuses how well the multiple-layered model functions, and how effective it is in helping the NFIP achieve its goals.

1.2.4 Scope and Method for Assessing Community Compliance

This evaluation of community compliance with the NFIP considers the role of each level of government in the NFIP community compliance program, the operation of each of the program's three components (promotion, monitoring, and enforcement), the effectiveness of the overall program model (a combination of cooperative, voluntary, self-monitoring, and deterrence approaches), the impact of several special issues on community compliance, and the nationwide level of community compliance. The study team addresses issues, processes, and procedures that are widely recognized as indicators of compliance and discusses both the NFIP's many strengths and its seeming weaknesses. In identifying both, the goal is to recognize the program's considerable accomplishments with regard to compliance as well as to improve its overall effectiveness.

To gain familiarity with the NFIP and build background knowledge, the study team reviewed hundreds of academic and evaluative reports from both FEMA and FEMA's Inspector General and outside organizations such as the U.S. Government Accountability Office (GAO) and the Association of State Floodplain Managers (ASFPM). The study team conducted many interviews with officials at FEMA headquarters and in most of the regional offices to obtain information on federal policy, guidance, and organizational history.

The study design included consideration of the collection of aggregate data, case studies, and interviews. The research design chosen focuses on lengthy, open-ended interviews with regional, state, and community staff. Budget restrictions precluded a sufficiently large randomly drawn sample of communities to be statistically representative of the whole country. Instead, the study team purposively selected communities to interview that would make the sample as representative as possible of the issues and problems faced nationwide, focusing in particular on the areas where current and future flood risk is greatest and thus where success in compliance is most important. These interviews were concentrated primarily, but not exclusively, in many of the nation's most vulnerable communities (e.g., several in the New Orleans area) as well as in communities with high concentrations of policyholders across the country, such as coastal Florida and Texas.

This approach of "over-sampling" communities most at risk is warranted not only because it concentrates attention where the issue is most important but also because there are so many communities in the nation with very few flood insurance policies. More than half of the 20,000 NFIP communities have 10 or fewer flood insurance policies—about 3,000 of those have no policies at all. Given a growing list of 20,000 communities and a shrinking or static operational budget for compliance for the implementing agency (FEMA), the evaluation model should mirror the strategy of placing emphasis where risk from lack of compliance is greatest. These concerns are greatest in the areas in which the study team over-sampled in its interview

approach, and so successful compliance among these areas perhaps should be weighted more heavily in the evaluation of compliance.

It should also be noted that this was a multi-year investigation so a cut-off date had to be established to enable the study team to concentrate on analysis instead of continually accumulating more updated information. Thus, certain single years (say, 2002) or cut-off dates were chosen for analysis of given topics, even though by now more up-to-date information exists. Issues for which significant changes took place after the data-gathering ceased are noted. Every effort was made to obtain the most current and accurate data when possible.

The selection of FEMA regional offices and their staff, states, and communities was based on a combination of factors: FEMA's recommendations of respondent entities that likely would yield meaningful insights; AIR's judgment of the entities most likely to shed light on the questions developed in light of the background material and preliminary interviews; a weighted sample of communities and FEMA regions that represented most of the flood insurance policies and major flood risk areas; and the time, cost, and personnel limitations imposed by the scope of the overall study. A clustering sample selection approach was used to reduce time, effort, and travel expenditures. That is, if interviews and research were scheduled for a particular FEMA regional office, the study team took advantage of the proximity of its field personnel to conduct interviews and research with states and/or communities nearby. This purposive approach also attempted to choose respondents broadly representative of the universe of NFIP communities, states, or FEMA regional offices and thus provide different perspectives on compliance.

The study members also met with lenders, members of the National Flood Determination Association, and representatives of companies that sell flood insurance, and also had access to correspondence between FEMA regional offices and states and communities. Many of these communities were contacted by telephone. Correspondence also included reports on visits to communities.

This purposive sampling had both advantages and disadvantages. On the positive side, the study team was able to gather a large amount of information about many of the issues believed to be central to the question of the success of community compliance with the NFIP, including the opinions of many professionals with expertise accumulated over decades. A principal drawback of the sampling method was that for most issues the data obtained cannot be judged to be perfectly representative of the universe of NFIP communities, states, or (perhaps to a lesser extent) FEMA regional offices. Nor is it possible with data obtained through this method to make direct comparisons of compliance between groups of communities with different characteristics (such as coastal vs. inland communities; Community Rating System participants vs. non-participants; communities with recent flood experience vs. those with none; etc.).

Although consideration was given to performing one or more case studies of compliance in a particular state or community (or both), the study team concluded that this approach was not the most effective use of study time or funds. The complexity of the compliance process within a community, combined with the wide array of individual characteristics that are specific to a given community, and the fact that NFIP compliance or noncompliance unfolds over time—sometimes a long period of time—suggested that case studies of individual communities could provide incomplete pictures even for the type of community they were intended to represent. Although a series of case studies would yield some useful information, the information would be

far from generalizable, so the decision was made in consultation with FEMA to focus the scope of work on national-level patterns.

FEMA's 10 regional offices hold primary responsibility for implementing, managing, and monitoring community compliance with the NFIP and retain considerable autonomy and discretion to address compliance issues. Recognizing this, the study team conducted lengthy, open-ended interviews in eight of the 10 regional offices with 70 staff members—including 16 senior NFIP staff. The study team conducted additional interviews with representatives of 10 NFIP state coordinating agencies, 21 participating communities; four regional, nongovernmental organizations involved in the NFIP; the Association of State Floodplain Managers (ASFPM); and several specialists in specific areas of the NFIP, such as insurance and training. The regional offices included in the interviews covered more than 90 percent of the flood insurance policies and 80% of the communities in the NFIP.

During each field investigation, the study team collected community files, policy guidance, and letter and communication templates. All of the interviews conducted were open-ended to allow respondents to fully expand on their experiences and observations regarding compliance. Several of the same questions were asked of most respondents to assure some consistency across interviews and to allow comparisons. The responses gathered from these interviews often guided further research by identifying the compliance processes that are difficult or problematic to implement. For example, it was through these interviews and review of additional literature that the study team identified the need to pay particular attention to community compliance with the NFIP's substantial damage regulations and to variances. Confidentiality was promised and provided to each respondent.

The study team had access to the Community Information System (CIS) and BureauNet databases and reporting tools (described in subsequent sections of this report) to gather information on a number of subjects. Much of the observation and analysis focused on contacts and visits with communities conducted by FEMA regional office or state personnel. To gain a better understanding of the tools for monitoring compliance and providing training, the study team shadowed staff on assistance visits conducted in four participating communities. These visits ranged from one to five days.

1.3 Organization of the Report

Chapter 2 of this report discusses the level of community compliance nationwide. The chapter after that begins the presentation of data about and analysis of the roles played by the different levels of government in the compliance program of the NFIP. After that, each of the components of the program is evaluated in a separate chapter (promotion, monitoring, and enforcement). Chapter 7 then explores three potentially problematic issues in community compliance (the substantial damage/improvement requirement, variances, and the Community Rating System). That is followed by Chapter 8, a summary of the evaluation. In Chapter 9 the study team presents recommendations for improving the effectiveness of the community compliance program. A series of appendixes supplies backup information as referenced in the body of the report.

2. THE LEVEL OF COMMUNITY COMPLIANCE NATIONWIDE

In 1998, it was observed that “there has never been a comprehensive assessment of the level of compliance nationwide” (Pasterick 1998). In the 35 years of the existence of the NFIP, the extent to which communities and buildings have been meeting the standards set forth to minimize flood damage had never been measured. At the outset of this evaluation of the NFIP, it was hoped that this investigation could at last shed light on those elusive figures. This study on community compliance and the companion study on building compliance (Mathis and Nicholson 2006) have made progress in answering that question, but producing comprehensive and fully reliable statistics has proven problematic.

This chapter describes the methods of measuring compliance that were considered by the study team, lists the advantages and drawbacks of each, and explains why each was rejected for this study. That is followed by a discussion of a means by which the study team was able to generate a rough estimate of the level of community compliance nationwide, along with a description of that method’s assumptions and shortcomings.

2.1 Defining Compliance

In general, under the compliance model used by FEMA, a community is either compliant or noncompliant. For compliance purposes, FEMA does not assign ratings to communities, nor does it establish performance rankings or grade levels. The main reason for this is that the NFIP standards set forth in the regulations are *minima* that must be met for a community to participate in the NFIP. The only communities that are formally and publicly considered noncompliant in the NFIP are those that are on probation or have been suspended from the program.

Nevertheless, there are some “gray areas,” notably the situations in which a community has been found to have some enforcement problems (program deficiencies and/or violations) and is working to address them. As discussed elsewhere in this report, the process of correcting program deficiencies and remedying violations can take a long time—a year or more—so that condition of indefinite status can last at least that long. Another gray area is the situation in which a community is found to have program deficiencies or violations, but they are “minor” as defined by the NFIP community compliance program. It is very common to find a community with at least one enforcement problem, so in attempting to develop an aggregate measure of compliance, consideration must be given to whether communities in these situations are to be considered compliant or noncompliant.

This difficulty is also encountered in other compliance and enforcement programs. For example, it has been noted that for the pollution control programs of the Environmental Protection Agency there are “a series of definitional and usage problems that frustrate those who would like to use the term” compliance (Brown and Green 2001, p. 40). These include the question of whether a facility (a community, in the NFIP model) is assumed to be compliant if it has not been inspected lately, or whether it is therefore assumed to have the same status as it did at its last inspection, even if that was noncompliance. Another example is whether one day of emitting pollutants renders a facility noncompliant for the whole quarter or other reporting period.

2.2 The Optimal Level of Compliance

The study team did not uncover any statement by FEMA or Congress about what level of compliance with the NFIP should be sought nationwide, nor is there a clearly relevant alternative governmental compliance program model with well-defined, publicly-stated goals for compliance levels. It seems obvious that anticipating 100 percent community compliance is unrealistic, but a desired level has neither been defined nor illuminated in the research literature on other compliance schemes.

Some examples of levels of compliance calculated for other programs are presented below. The difference between the NFIP and the other programs in these examples in terms of purpose, operational framework, entities monitored and regulated, and enforcement options available is readily apparent and makes all of these unsuitable for direct comparison. Nevertheless, they do give a flavor of the range of compliance levels experienced in nationwide programs as well as the variation in means by which these figures are obtained and calculated. In the research literature and public documents describing environmental and other compliance there was a pervasive lament about the relative lack of effective monitoring and the shortage of solid evidence of compliance (Portney 1990).

- The compliance with the provisions of the Highly Erodible Land Conservation and Wetland Conservation programs of the U.S. Department of Agriculture was found to be about 97 percent. This was based on a review of the records for 17,723 tracts of land that are receiving payments under those programs (covering about 4.9 million acres), of which about two-thirds were selected randomly and the other third purposively because of the potential for noncompliance (Claassen *et al.* 2005, p. 13). The U.S. General Accounting Office criticized the method used to reach this figure as including some tracts that were not required to comply with the provisions (U.S. General Accounting Office 2003). When these were omitted from the totals, the compliance rate came down to 93 percent.
- Based on a survey of managers of underground storage tank programs in all 50 states, the U.S. Environmental Protection Agency found that 89 percent of the 700,000 tanks subject to the rules of the Underground Storage Tank program were initially compliant, that is, the tanks had the required protective equipment in place that prevents hazardous substances from leaking into soil or groundwater. However, 30 percent of all the tanks were not compliant with the operations and maintenance standards (U.S. General Accounting Office 2002, p. 2).
- The compliance of the manufacturing sector during 2001 and 2002 with the air quality program administered by the state of New Jersey was calculated at 64% (Shewmake 2004, p. 20). This figure was based on over 7,200 inspections of 1,709 facilities; those with any emissions violations were considered noncompliant.
- Based on 35,600 federal and state inspections conducted in 1998 and 1999 of major sources of air pollution (as defined under Title V of the Clear Air Act), 88 to 89 percent of facilities were calculated to have complied with their emissions permits. However, knowing that these routine inspections often do not detect all problems, EPA further investigated and found that 76 percent of wood production facilities (to

cite one example) had made operational changes without obtaining revisions to their permits and that, further, in the refinery industry there was widespread under-reporting of emissions from leaking valves and other equipment (U.S. General Accounting Office 2001, p. 2).

- The proportion of drinking water systems in significant non-compliance with Clean Water Act standards was calculated at about 15 percent nationwide (Davies and Probst 2001, p. 15). This figure was based on facilities that did not have any violations during at least one quarter of Fiscal Year 1998.
- Based on five years of continuous data on about one million facilities subject to federal air, water, waste, and drinking water laws administered and enforced by the states under authority delegated from the U.S. Environmental Protection Agency, 97 percent of all sites were found to be “not in significant non-compliance” (Brown and Green 2001, p. 33). This figure was based on the number of sites for which no “significant violations” were found after inspections (297,000 conducted in 1999 alone) and/or other compliance evaluations (178,558 conducted in 1999).

It can be seen from this range of examples that there is wide variation in the way compliance is defined and determined, along with variation in the actual aggregated level that is calculated. Further, no optimal level of compliance was discussed in relation to any of these programs, although all the data were presented in terms of searching for ways to improve the compliance rate. In theory, FEMA should be able to develop an optimal level of community compliance for the NFIP based on premium income, cost of administering the program, anticipated claims, and other factors. But the “proper” threshold may be more a matter of public policy than finance. If communities make a commitment to enforce their ordinances in exchange for federal benefits in the form of flood insurance and flood disaster assistance, it seems apparent that they should be kept cognizant of the NFIP’s requirements, and as best as they can, meet that agreement in full at all times. These are issues for Congress and/or FEMA to decide.

Related to the issue of setting an optimal level of compliance is the question of assessing the performance of FEMA’s compliance program in relation to overall compliance. For many years, there have been complaints from floodplain management staff and officials that FEMA does not impose its probation and suspension sanctions “often enough.” In the absence of reliable figures on the overall level of compliance—and whether it is rising or falling over time—it has been impossible to say whether the sanctions are used in an appropriate number of instances or to determine what effect their use may have on levels of compliance.

Another consideration in determining an optimal level of compliance is that of change over time. Any assessment of the level of nationwide compliance would need to be repeated periodically because of (1) turnover in local personnel; (2) changes on the ground as development occurs and alters watersheds; and (3) changes in the NFIP maps, regulations, policies, and guidelines. If an “ideal” level of compliance is to be used as a goal, the amount and types of anticipated change must be taken into account.

A final factor is whether to give added weight to communities with large numbers of flood insurance policies. To protect the Flood Insurance Fund, the level of compliance in those communities arguably should be higher, or guarded more rigorously, than in other communities

and doing so should be more cost-effective in terms of time and resources available for compliance activities. On the other hand, flood damage is just as harmful and disruptive to communities with few insurance policies and all flood-prone communities should be ready to handle future development in their floodplains. Concerns about equity might dictate that communities be treated similarly. Again, this sort of difficulty arises in environmental regulatory programs. How does one account, one investigator poses, for the situation in which one small facility is compliant with air and water quality laws but another, large facility is not? (Brown and Green 2001, p. 40). Depending on how compliance is defined and how the data are aggregated, the two entities could have equal impacts on the nationwide compliance rate but they definitely have disparate impacts on the overall level of undesirable outcomes (more pollution in the case of environmental regulatory programs and, by analogy, more flood losses and costs in the case of the NFIP).

2.3 Independent Evaluation of Compliance

2.3.1. Compliant Buildings as a Measure

One of the most illuminating pieces of information that would result from any evaluation of NFIP compliance is the extent to which the floodplain areas throughout the United States are either free of development or are developed only with buildings that are constructed to resist damage. From this perspective, the number of floodplain buildings that are in violation, and how serious those violations are, is an important measure of overall compliance with the NFIP. Part B of this evaluation, *Are Minimum Building Standards Being Met?* examined this issue. Of the buildings inspected for that study, 63 percent were found to be fully compliant with NFIP standards and 89 percent were elevated properly (probably the most effective way to minimize future flood damage) although some other aspect of the building may have been noncompliant (Mathis and Nicholson 2006).

2.3.2. Compliant Communities as a Measure

Measuring the number of building violations is only part of the answer to the question of overall compliance. Violations, by definition, have already occurred. Because a principal focus of the NFIP is to prevent and minimize *future* flood damage, the overall administrative strength and compliance of each community's program—and the aggregated strength and compliance of all the nation's community-level programs—is important, because that is how future violations (and increased flood risk) are prevented. Thus, the number of communities in the United States that are compliant at any given point, or over time, is a companion to the level of flood-resistance of buildings as indicators of overall compliance with the NFIP standards nationwide.

The study team believes that the most accurate, impartial, and comprehensive way of measuring nationwide compliance would be to conduct on-site visits with a representative sample of communities nationwide. Floodplain management professionals agree that the only way to be certain whether a community is compliant is to conduct an on-site visit and evaluate the program. The visit would be similar to a Community Assistance Visit (CAV) (see Section 4.1) in that it would include checks of community ordinances, records, and procedures, and an inspection tour of the floodplain. This would establish a “snapshot” judgment of the compliance or noncompliance of the community at a given point in time. The results of these evaluations would be accumulated to determine what percentage of communities is compliant, what kinds of

noncompliance are most common, how the level of compliance varies across community types, and other information.

Such an assessment would be a massive undertaking. Experienced personnel would be needed to conduct the evaluation visits. The number of communities studied would have to be large enough to ensure that a random sample would include representatives from every significant category of community: coastal, riverine, rural, urban, slow-growth, fast-growth, and others. Reaching agreement on how to define the categories would be necessary as well. Each visit would take at least one day and probably several. The travel expenses would be considerable. This approach far exceeded the resources available for this study.

2.4 Existing Data to Measure Community Compliance

In the absence of the ability to gather extensive and objective indicators on compliance independently, the study team looked for data that have already been collected that could be used to establish nationwide levels of community compliance with the NFIP.

Obtaining and cataloging information for all 20,000 communities in the NFIP is formidable task. FEMA has been pursuing the collection of aggregate-level compliance data for many years, through various means (such as the mandatory biennial reports submitted by communities). Most of these data are housed in the Community Information System (CIS) and are fairly comprehensive for some categories of information, notably flood insurance, but as discussed in detail in Section 5.2, they contain gaps, particularly with regard to data pertaining to compliance issues, and are difficult to analyze through the software currently integrated into the CIS. Further, although the study team attempted to verify independently some of the crucial information, this effort was extremely time-consuming and not wholly successful. Nevertheless, the data are useful for certain purposes.

2.4.1. Alternatives Considered

Using CRS Communities as a Proxy for Nationwide Compliance

The study team considered using the Community Rating System (CRS) (see Section 7.3) communities as an indicator of overall compliance. This option is attractive for several reasons. First, the number of CRS communities is manageable (about 1,000). Second, there exist more comprehensive and more accurate data about them than about the rest of the participating communities. Third, CRS communities account for about two-thirds of the NFIP policy base, so their importance to the NFIP and the Flood Insurance Fund is disproportionately great.

However, although the level of compliance among CRS communities is a useful benchmark, it cannot be said to reflect the entire universe of NFIP communities. Most obviously, CRS communities are by definition already supposed to be compliant at meeting the minimum standards of the NFIP (although, as shown in Section 7.3.4, they are not 100 percent compliant), so their rate of compliance is almost certainly better than that of the rest of the NFIP communities. All CRS communities are actively engaged in flood damage reduction beyond the minimum requirements, which cannot be said for all the other NFIP communities. Using CRS compliance rates would result in an overestimation of nationwide compliance.

Communities on Probation or Suspension

At any point in time, there is only a handful of communities on probation or suspended from the NFIP. Although this figure is easy to obtain and verify and does reflect the level of formally declared noncompliance (from which a level of compliance can be derived), it is meaningless as a measure of on-the-ground adherence to program standards nationwide. Much of this report has demonstrated the lengths to which FEMA and the states must go to help communities reach a level of compliance that is acceptable, and the difficulties encountered in attempting to impose a sanction on a noncompliant community so that it can be considered formally noncompliant. Using the number of communities on probation or suspended would clearly over-represent the level of nationwide compliance.

Communities Threatened with Probation

As with communities on probation or suspension, the number of communities with noncompliance severe enough to warrant being threatened with probation via a probation letter is easy to obtain (104 in the history of the NFIP), but cannot be considered a measure of overall noncompliance.

Professional Judgment

Floodplain management staff members from both FEMA regional office and state offices were asked during interviews to estimate the percentage of communities in their region or state that were compliant with the NFIP standards. Most respondents gave estimated performance levels of between 75 and 80 percent compliance. Their estimates ranged from zero to 100 percent and applied to both small portions of their territories to entire states. They also noted, however, the variability in perceptions of compliance: some staff consider a community with even one small violation noncompliant (albeit temporarily) while others believe that, if the community has a valid ordinance, is making good faith efforts to implement it, and has avoided numerous serious problems then it can be considered “substantially” compliant.

Communities with Program Deficiencies or Violations

The main reason for finding out how compliant communities are nationwide is to obtain an idea of how well the NFIP is operating to minimize flood damage. With that in mind, it seems clear that for this purpose noncompliance should be defined as all communities with any program deficiencies or violations, because those defects represent increased potential flood damage. Obtaining the number of communities in this category (or a representative sample of this category) would enable the calculation of a nationwide level of compliance. Because FEMA and state staff already conduct on-site evaluations of community compliance, in theory their data on program deficiencies and violations could be used for such an accounting.

Section 5.2 describes the procedure by which reports of the onsite visits (CAVs) conducted by FEMA and state staff, which list program deficiencies and violations, are catalogued in the CIS. In theory it is possible to review all of the CAV reports for a given period of time and note the number of communities in which program deficiencies and violations were found. From that, an overall level of noncompliance could be extrapolated. The accuracy of this technique would depend on the validity of several assumptions: (1) all CAVs that were done have been entered in the CIS; (2) the CAV reports as entered in the CIS are accurate; (3) enough

CAVs are reviewed to be representative of communities nationwide; and (4) the CAV reports have accurately assessed the program deficiencies and violations in each community. Because of time constraints and the fact that it was not clear that the assumptions could be met, the study team did not review the CIS records to calculate the number of communities with program deficiencies or violations noted in the report as filed in the CIS. Therefore, the percentage of CAVs that have detected compliance problems is not available as a basis for calculating compliance nationwide.

Communities with Persistent Program Deficiencies or Violations

Program deficiencies or violations only manifest themselves as additional costs to the NFIP if and when development results that is itself noncompliant and thus increases the potential for flood damage and then floods do in fact occur. Because of these location- and time-specific complications, it is not possible through the method used in this study to calculate additional costs to the NFIP, or increased insurance premiums, due to given levels of community noncompliance.

Because floods do not occur frequently in any one community and addressing deficiencies and violations can take a long time, for purposes of assessing nationwide compliance, therefore, it is reasonable to make an allowance for minimal or short-term noncompliance. Taking into consideration FEMA's own guidance on community compliance, which anticipates that a year or so may pass before a community's compliance problems are fully addressed, and that historically sanctions usually have been imposed only after several years have passed, the study team decided, for purposes of making nationwide estimates, to count as "noncompliant" those communities whose program deficiencies and violations are not addressed within two years of being identified. An advantage to this approach was that these data were more readily available to the study team.

2.4.2. Analysis of Communities with Persistent Compliance Problems

As described in Section 6.1, CAV reports are labeled "closed" when all outstanding compliance issues resulting from the visit have been resolved. From CIS the study team was able to obtain data on the number of CAVs conducted and the number that were closed at different points in time over a five-year period. (Some of this information is displayed in figure 9.) These data showed that, two years after CAVs are conducted, about 30 percent of the communities that had received those CAVs still have outstanding compliance problems.

The accuracy of this technique depends on all four of the assumptions listed above and also on four additional assumptions. The study team also assumed that (5) the five-year period for which data were analyzed is fairly representative of any other five-year period; (6) CAVs were open only because enforcement problems had not been addressed and not because of recordkeeping errors or other reasons; (7) CAVs were closed only for communities whose enforcement problems, if any, had been resolved, and not because of recordkeeping errors or other reasons; (8) to the extent that assumptions 6 and 7 were violated, such recordkeeping errors roughly offset each other (false negatives and false positives are roughly balanced); and (9) about half of the communities that received CAVs were representative of all NFIP communities and the other half were selected because of reported or suspected compliance problems. These assumptions were made based on the best judgment of the study team after discussions with

numerous FEMA, state, and community representatives, as discussed in other sections of this report.

Most of these assumptions admittedly are violated to some degree. As noted elsewhere, the study team found the CIS data to be incomplete and of questionable accuracy. Recordkeeping errors have been made, some CAV reports have been closed even though compliance problems still existed, and some CAVs may still be shown as open even though all compliance issues have been addressed. The CAVs conducted and recorded in CIS probably over-represent communities with compliance problems or with a potential for them, since CAVs often are conducted in communities where there is a known potential for noncompliance (for instance, after contact with the community or after a complaint has raised suspicions of compliance problems), but it is not known what proportion of communities are selected on this basis.

However, the study team believes that the data are accurate enough, at this aggregate level, to yield an estimate of nationwide community compliance. If half of CAVs are conducted where compliance concerns are most likely to be found (the ninth assumption, above), then most, but not all, of the other communities visited would be expected to be compliant. To generate an upper bound of community noncompliance, the team first assumed that the percentage of persistent noncompliance is three times higher in communities for which CAVs are conducted purposively because many are already suspected of having compliance problems.¹⁶ This means that the compliance rate for the half of communities sampled randomly would be 15 percent.¹⁷ If the half of CAVs conducted randomly is assumed to reflect best the majority of communities in the NFIP and thus taken as a lower bound of persistent noncompliance, this leads to a calculation of no less than 15 percent noncompliance, as defined earlier, among communities.¹⁸ An upper bound of noncompliance would assume that the rate of persistent noncompliance among those communities selected purposively and those selected randomly are roughly the same.

This leads to a calculation that between 15 and 30 percent of NFIP communities nationwide may be persistently noncompliant, defined, as noted above, as not addressing program deficiencies and/or violations within two years of having those problems identified by FEMA or the state. Again, as discussed in the previous section, this level of program deficiency or violation represents a potential for additional flood damage and costs to the NFIP, although it was not possible to calculate additional costs or increased premiums that would result from given levels of community noncompliance.

The problematic nature of making this sort of compliance level determination is not unique to the NFIP. Other government programs, especially environmental ones, face similar difficulties in assigning meaningful numbers to data collected, aggregated, and interpreted in different ways by different responsible parties. For example, as described above in the case of

¹⁶ Many selected purposively are simply large communities that are felt to deserve additional attention due to the amount of development or number of structures in the floodplain.

¹⁷ For instance, if 1,000 communities are given CAVs, half randomly with one-third the rate of noncompliance found as those selected purposively, the number of noncompliant communities found would be 75 among those 500 selected randomly and 225 among those selected purposively, or rates of 15 percent and 45 percent, respectively.

¹⁸ The phrase “no less than 15 percent” was chosen as a lower bound because the set of communities not selected randomly exists, even if in smaller numbers, and so the actual lower bound must be larger than that number, given the assumptions discussed.

federal programs for preventing air and water pollution that are administered by the states on behalf of the U.S. Environmental Protection Agency, a nationwide compliance rate of 97 percent was calculated by identifying violators and subtracting the number of violations from the number of entities regulated. However, for the same regulatory programs for the same period, the states were asked to report a compliance rate based on their usual methods of determining such levels, which included both calculations based on data and estimates based on other factors. Their responses, aggregated to a nationwide level, can be stated as 74 percent of the states' reporting environmental compliance rates of 80 percent or greater¹⁹ (Brown and Green 2001, p. 40). This is a fairly substantial difference in the two methods of determination, and points out the difficulties inherent in compliance measurement.

2.5 Level of Nationwide Compliance

Based on the above analysis of persistently noncompliant NFIP communities, it can be extrapolated that between 70 and 85 percent of NFIP communities nationwide are probably fully compliant or can be expected to remedy identified noncompliance within two years. This is in keeping with the professional judgment of federal and state floodplain management staff, also noted above, that between 75 and 80 percent of communities are compliant.

What these figures convey is uncertain. It is unrealistic to aspire to 100 percent compliance in every community 100 percent of the time, particularly when the NFIP is fundamentally a non-regulatory program and hence has limited resources allocated to it for monitoring and enforcement. Few other governmental programs that have small compliance budgets expect perfect compliance. In the absence of comparable compliance levels from other programs to serve as models and without establishment of goals for an acceptable NFIP compliance rate on the part of Congress or FEMA it is difficult to know what is reasonable. Nor are there reliable outcome measures to gage the acceptability of this level—this study was not able to connect directly the level of community compliance during a given period with claims data or loss model results to provide an estimate of the effect of noncompliance on the actuarial soundness of the NFIP. For all of these reasons it is not clear whether the 75 to 80 percent compliance rate implies the need for drastic improvement or cause for satisfaction. However, this report indicates ways in which FEMA can improve its compliance program and, it is hoped, the nationwide compliance rate.

¹⁹ Half the states report compliance at 90 percent or greater and another quarter of the states report it at between the 80 and 90 percent levels (Brown and Green 2001, p. 40).

3. THE ROLE OF COMMUNITIES, THE STATES, AND FEMA IN COMMUNITY COMPLIANCE

Although the NFIP is a federal program, its successful implementation and management depend on the participation of a variety of partners, including local communities, state floodplain management offices, and FEMA headquarters and regional offices

Participating communities agree to adopt and enforce compliant floodplain management regulations as a condition of making federal flood insurance available. FEMA regional offices and state floodplain management programs support local communities by providing technical assistance and monitoring and enforcing compliance with the requirements of the NFIP.

3.1 The Community's Role

Communities must enforce the ordinances that they adopt. This means, first, that all development, defined as “any man-made change to . . . real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials,” in a community’s Special Flood Hazard Area (SFHA, as mapped by FEMA, discussed in the previous chapter) must be reviewed and permitted. The community’s permitting process allows it to ensure that all construction and development is adequately designed, located, constructed, and anchored to minimize flood damage and be fully compliant with its floodplain management ordinance. Communities can grant exceptions, called variances, to the NFIP requirements under limited circumstances. FEMA recommends communities conduct inspections throughout the building process to detect violations and remedy them before the structure is completed. Once a structure is built, the community must obtain an as-built elevation certificate (or floodproofing certificate if floodproofing is allowed). The elevation certificate compares a surveyor’s or engineer’s record of the elevation of the structure’s lowest floor to the BFE at the site. These and other documents must be retained by the community and become public records.

Communities must designate a floodplain manager who is responsible for ensuring the community complies with its ordinance. The floodplain manager serves as FEMA’s and the state’s contact within the community. In general, he or she is responsible for understanding NFIP regulations, reviewing permit applications, conducting inspections (or designating a staff member to conduct inspections), taking enforcement actions against noncompliant development, monitoring and participating in the variance process (although he or she is not usually responsible for issuing variances), and keeping the community’s floodplain records. Ideally, a community ensures that its floodplain manager is properly trained and professionally certified.

FEMA believes that local officials have the knowledge, capabilities, and resources to best address floodplain management problems. FEMA guidance notes that “there is no effective substitute for developing and maintaining high quality community capability in floodplain management than through one-on-one contact with local floodplain management administrators.” Both FEMA and the states—separately and cooperatively—work to help communities develop and maintain the expertise necessary to properly administer NFIP-compliant floodplain management programs.

3.2 The Role of the States

States play a vital, but vaguely defined role in the management and administration of the NFIP. Besides the requirement that states designate a coordinating office for the NFIP, the National Flood Insurance Act is largely silent about the state role. The NFIP regulations at 59 *CFR* 60.25 define the state role loosely as a supportive one (Mittler *et al.* 2006). The role played by the states today has been created administratively out of the federal government's need for much more on-the-ground assistance than it can provide by itself and also out of the significant capacity states have to interface with the local communities whose implementation is the backbone of the NFIP. States are in a position to define the needs of their communities better than FEMA and can be more effective than regional officials in delivering services (technical assistance; monitoring, and pursuing corrective actions in communities) to communities because of their knowledge of and familiarity with state governing authorities and how these interrelate with local floodplain management ordinance as well as their knowledge of related state programs.

Federal regulations emphasize the state's responsibility to assist communities in the management of their floodplains. States are required to designate an agency of state government to be responsible for coordinating program aspects of floodplain management in the state.²⁰ State floodplain management programs are administered by a single state office, whose location in a particular agency varies from state to state. A state-designated NFIP Coordinator in that office has responsibility for coordinating all NFIP-related activities undertaken by agencies within the state. The office of the state floodplain coordinator serves as a state partner with the staff at the FEMA regional office who do NFIP work in the state.

If communities within their jurisdictions are to participate in the NFIP, states must have enacted legislation that enables communities to regulate development within flood-prone areas, assist communities to qualify for participation in the NFIP, and provide local governments and the general public with program information on the coordination of local activities with federal and state requirements for managing flood-prone areas. In addition, state floodplain management programs may include mapping and hazard mitigation programs.

Within the state floodplain management office—often housed in an emergency management agency or natural resources department—one or several individuals serve as floodplain management staff. Due to differences in state priorities and capabilities, the role of the state coordinating office varies widely among states. In some states the NFIP coordination functions have been integrated into the state's own floodplain management programs; in others, meeting federal requirements and helping communities meet them is the only floodplain management activity undertaken at the state level. In both cases, however, the state role generally includes a range of promotion, monitoring, and enforcement activities, such as encouraging communities to participate in the NFIP; providing floodplain management and NFIP training and technical assistance to communities and other state agencies; and communicating to and coordinating with FEMA on community needs and compliance problems. Some states plan and implement their own projects for managing floodplains, operate mapping programs, and have their own state-level floodplain management regulations to implement and enforce.

²⁰ All 50 states, the District of Columbia, and three territories participate in the NFIP.

The roles of FEMA regional offices and state offices overlap in all three approaches to community compliance in the NFIP, although certain tools within each are used more by the states and others more by FEMA. Regions and states both provide training and workshops and assist localities in designing, implementing, and enforcing their ordinances. Thus, regions and states cooperate on a number of NFIP issues. For instance, 1) states and regions negotiate compliance activities to be conducted for upcoming years using the Community Assistance Program-State Support Service Element (CAP-SSSE); 2) if states find serious violations to local ordinances, they are brought to the attention of the regional office, and 3) regions agree to support local compliance with any state regulations that exceed the standards of the NFIP.

In March 2003, FEMA conducted a telephone survey of 26 state floodplain managers in all 10 regions asking them what they thought their roles were in the NFIP. The states said their role in assuring compliance was 1) assisting, working with, and educating participating communities; 2) notifying or referring the violations to FEMA; and 3) notifying or meeting with local officials. The study team found that nearly all states offer workshops, provide technical assistance, visit communities, and review ordinances. One regional office staff member stated that he relies on states to monitor compliance problems as well as bring problems to the attention of the region, saying that “they are the eyes and ears of the region.”

3.2.1 States as “Participating Communities”

State agencies also participate in the NFIP in much the same way that communities do, since states meet the definition of a “community” set forth by the NFIP. Thus, state construction projects in mapped flood hazard areas are required to comply with the minimum floodplain management criteria set forth in 44CFR60.3. Like other communities, states cannot obtain federal flood insurance on state buildings if they are not fulfilling their responsibilities pursuant to NFIP participation.

Little definitive information is available about state agency compliance with NFIP regulations. There are preliminary indications that some state permitting processes may be noncompliant. For instance, a recent survey of state programs by the Association of State Floodplain Managers (ASFPM)²¹ asked states to assess their own compliance, staff from 27 states revealed that they knew of occasions when agencies in their states did not comply with NFIP regulations (ASFPM 2004). The subject is discussed in greater detail in the NFIP evaluation sub-study, *State Roles and Responsibilities in the National Flood Insurance Program* (Mittler *et al.* 2006).

Although this evaluation did not address state performance in meeting NFIP standards, the study team encountered comments from both FEMA regional offices and states on the need for an assessment of state compliance with the NFIP. Such an assessment would provide an opportunity for state staff (especially non-floodplain management staff) to receive technical assistance if needed as well as be a way to verify compliance with NFIP regulations. A state assessment would include a review of state facilities and site visits to hospitals, campgrounds, maintenance facilities, prisons, etc. Several regional and state officials stated that they did not

²¹ The survey was sent to 50 states, the District of Columbia, and Puerto Rico. Responses were obtained from 49 states, the District of Columbia, and Puerto Rico. Not all respondents answered all questions.

know whether the development activities of state agencies were in compliance with NFIP regulations.

3.2.2 State Capability for Compliance Activities

Like communities, states' capabilities to promote, monitor, and enforce community compliance are affected by the state legislation governing them. States can pass legislation that requires communities to meet or exceed the NFIP's floodplain management regulations. According to the ASFPM's survey, 60 percent of states have legislation exercising state authority over some aspects of floodplain management (ASFPM 2004). Additionally, many states have building codes or natural resource laws that support or exceed NFIP standards. The strength, or extent to which these regulations exceed NFIP minimum requirements, varies by state.

State regulations affect the level of participation of communities as well. Community participation in the NFIP is voluntary, although some states require NFIP participation as part of their floodplain management program. In 2002, 26 states required their communities to conduct land use planning as part of their land development review process. Communities in those states, for example, likely would have an easier time implementing their flood hazard ordinance as required for NFIP participation because state requirements for analogous land use management are already in place.

3.2.3 State Programs and FEMA's Community Assistance Program

The Community Assistance Program—State Support Services Element (CAP-SSSE), introduced in 1985, provides funding from FEMA to state floodplain management programs in order to identify, prevent, and resolve floodplain management issues in accordance with the compliance objectives of the NFIP. According to FEMA officials at headquarters, "the purpose of state CAP funding is to buy services for FEMA and build state capability in flood mitigation". State activities funded through the CAP include ordinance assistance; community assistance and monitoring through telephone, email, or onsite visit and appropriate follow-up; workshops and other training; entering floodplain management information into CIS; and general technical assistance—all of which help build local compliance with the NFIP.

CAP-SSSE funding is provided to states on a cost-sharing basis, with FEMA supplying up to 75 percent of total funding and the state providing at least 25 percent. In 2002, funding ranged between \$25,000 and \$250,000 per state, averaging \$96,000. With increases in overall CAP funding, by 2006 the average per state had reached \$140,000. Currently all 50 states participate in CAP-SSSE.

FEMA guidance maintains that "states are expected to continue to perform other duties and responsibilities of the state NFIP Coordinating Agency and support state floodplain management programs and initiatives using their own resources and funding," regardless of CAP-SSSE funding. However, only 12 states surveyed by FEMA in 2002 had a state-funded floodplain management program aside from the CAP-SSSE. Because many state floodplain management programs rely heavily on this federal funding, the CAP-SSSE is critical to the promotion, monitoring, and enforcement of community compliance with the NFIP.

However, two deficiencies in the current CAP program prevent it from funding state and local NFIP compliance activities as effectively as it could. First, even with recent increases,

CAP-SSSE funding has not kept pace with the state responsibilities and overall demand for flood services. A related drawback is that the criteria for distributing CAP-SSSE funds are vaguely understood and are viewed as not always accounting for the need or capabilities within each state, as discussed below. Second, state floodplain management programs sometimes are not held fully accountable for the non-completion of compliance activities once they do receive money, although funding has been pulled from states in some cases (Mittler *et al.* 2006). In essence, CAP-SSSE purchases floodplain management services for FEMA from state floodplain management programs, but the monitoring of those services is not as thorough as it could be.

Level and Allocation of CAP Funds

For most of the 1990s, CAP-SSSE funding nationwide was roughly \$3 million annually, spread over all the states. In the late 1990s and early 2000s, annual CAP funding gradually increased to \$5 million and then was substantially increased to reach \$7 million in both 2004 and 2005. During this period, NFIP policies in force grew by 84 percent (from 2.48 million in 1990 to 4.57 million in 2003). Flood-prone states and communities experienced substantial population growth, especially in coastal areas. Over 85 percent of states surveyed by ASFPM in 2003 reported that state-level floodplain management activities have either increased or stayed the same since 1995. In other words, the need for floodplain management work has increased substantially in most states, but until very recently CAP funding for state work stayed roughly the same, not even increasing enough to cover inflation. The meager funding is complicated by the fact that state budget deficits can limit the amount that a state can contribute as a match for the federal CAP funds, thus reducing the state's overall funding.

CAP-SSSE allocations are officially based on several factors, but FEMA headquarters officials retain considerable discretion in distributing funds, according to interviews with headquarters and regional officials. The primary factors are personnel, flood risk, and capacity. First, a base amount is designated to support at least one full-time floodplain management employee for one year—roughly between \$40,000 and \$50,000. Second, FEMA considers the risk of flooding in the state, based on the number of participating communities, insurance policies in force, and rate of development. States with communities having high rates of development along coastal areas may receive additional consideration based on their higher risk of flood damage. FEMA headquarters then makes lump sum allocations to each region. The regions in turn divide their allocations among their states.

Finally, the FEMA regional offices take into account the state's capacity to implement compliance activities effectively, based on personnel and the state government's resources for floodplain management. According to a FEMA official, regions generally provide more funding to better performing states. It is unclear based on the interviews and information provided by FEMA on what basis a state agency is judged to be better performing. In interviews, regional officials agreed in their judgment of which states are below-average performers, but offered mainly anecdotal evidence to justify their assessments. Although the above criteria shaped funding levels at the program's inception, FEMA stated that, in years when overall funding did not increase, funding usually has been based primarily on the previous year's support. In a year in which funding levels are higher, there is more opportunity to allocate the increased funding to states that are in need.

In the course of interviews, the study team frequently encountered frustration with the amount of funding provided by CAP-SSSE and a widespread belief that funding was simply handed out based on past amounts. The majority of FEMA and state officials with whom the study team spoke were uncertain or unaware of the criteria used to distribute money to the states. In interviews with state officials, none cited the same distribution criteria explained by FEMA headquarters.

This suggests that funding amounts are not set in a collaborative process between state and regional officials, with an eye toward the needs of the state for that year (including compliance activities). Because funding amounts are dictated to state floodplain management programs, and only later divided up for compliance activities, it is not possible for states to know how to make themselves more competitive for funds that would be used for compliance purposes. The lack of transparency also has contributed to negative perceptions among regional and state officials of the program's ability to properly fund state activities.

Accountability for CAP Funds

Accountability for the use of funds is built into the implementation process for CAP-SSSE funds in several ways. Headquarters allocates money to the regional offices, which make allocations to the states. The states' NFIP coordinating agencies apply for CAP-SSSE annually by submitting an application and workplan. Based on this, the region negotiates a "CAP agreement" with the state, detailing the type and number of activities to be completed during the upcoming year. The CAP agreement and the accompanying workplan are a formal, annual contract between FEMA and the state.

A typical workplan contains a description of the approach to promoting and monitoring compliance through a proposed number of activities such as visits to and other contact with communities, ordinance assistance, and workshops to be completed during the year. However, completion of floodplain management activities often is not systematically monitored or assessed in relation to goals or funding amounts at a regional or national level. Although accountability mechanisms currently exist for financial and activity reporting in CAP-SSSE, there have been no reporting mechanisms to measure the achievements or outcomes of activities undertaken using CAP-SSSE funds, according to a FEMA memorandum issued in 2002.

In Fiscal Year 2004, as part of FEMA's shift to performance-based management, CAP-SSSE guidance directed states to complete five-year strategic plans covering activities and goals for Fiscal Years 2005 through 2009. Each state is to negotiate work plans and performance measures with regional offices to establish clear expectations for performance.

A performance-based model of CAP-SSSE should increase accountability. It should be noted, however, that the model Five-Year Floodplain Management Work Plans and guidance in use during the period this study was conducted did not show a clear connection to flood loss reduction or compliance goals, focusing instead on administrative issues. For example, the guidance provided 20 suggested outcomes/outputs for states to use in their work plans. One suggested goal was simply "Increase the number of technical assistance contacts [visits to and other contacts with communities] to communities in your state that result in increased compliance." The *number* of activities conducted is not necessarily a significant indicator of overall outcomes and it is hoped that, as experience with the five-year CAP planning process

grows, the regional offices and states will develop more meaningful compliance goals, and ways of measuring progress towards them.

In summary, significant funding is provided to the states through the CAP-SSSE to conduct compliance activities, and the states clearly use those funds in a wide range of compliance activities. So far there often has been insufficient emphasis in the new five-year planning or the CAP agreements on the precise activities to be carried out, how those activities are expected to improve compliance, and whether (at the end of the year's funding cycle) they have resulted in improved compliance. Because most floodplain management activity is funded through the CAP in most states, measurable goals that contribute in specific ways to improved community compliance will be crucial to attempts to track and evaluate compliance and the states' role in it. The lack of such information for past years, given that states conduct so many of the NFIP-related compliance activities, has hampered attempts to evaluate progress in compliance.

3.3 The Role of FEMA

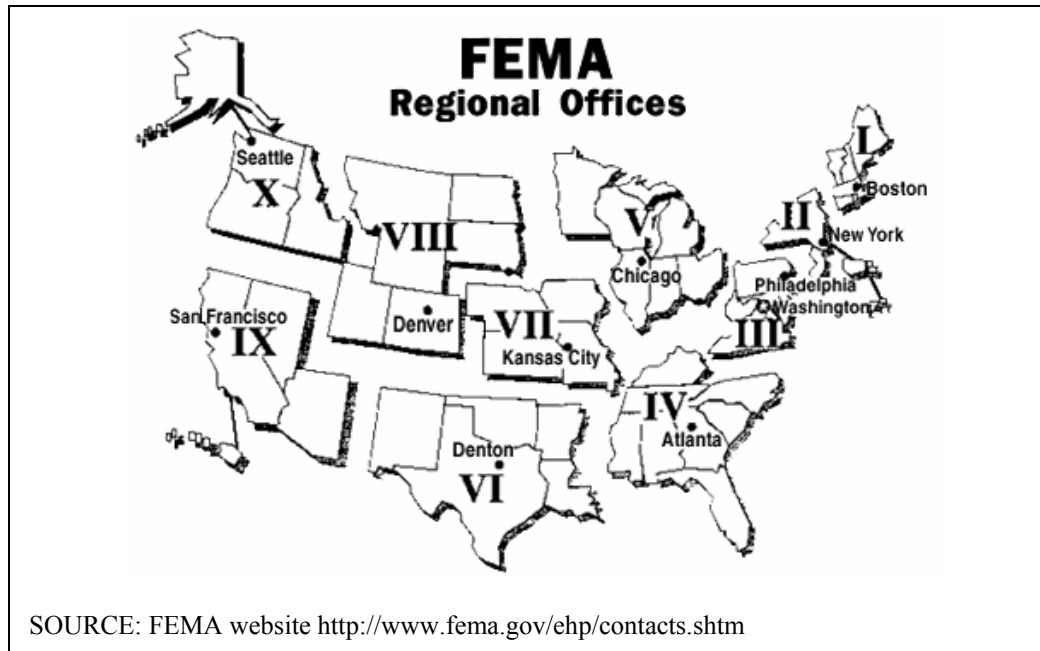
FEMA administers the NFIP on behalf of the federal government and, as such, is responsible for establishing and implementing measures to ensure community compliance with the program in accordance with 59 *CFR* 59.24.

Organizationally, FEMA consists of a headquarters office in Washington, D.C., and 10 regional offices, each of which serves several states (see figure 3). The headquarters personnel's compliance responsibilities focus on developing criteria, standards, policy, and guidance for the regional offices to assist them in community compliance. The Federal Insurance Administrator at headquarters has authority to suspend communities from the NFIP for noncompliance or reinstate them when appropriate (FEMA 1986, p. 1-3, 4).

The regional office personnel, unlike headquarters staff, have ongoing contact with NFIP communities and the states and are responsible for the implementation of the community compliance program. Their tasks include

- **Promotion**—Regional office staff help NFIP-participating communities administer their local ordinances in accord with NFIP requirements; provide technical assistance on all aspects of the NFIP, including flood insurance; maintain contact with communities through telephone, email, on-site visits, and other meetings; conduct training and other education; and other activities.
- **Monitoring**—Regional office staff monitor communities through community contacts, visits, and other means; review and follow up on community-specific information that may indicate compliance problems (such as insurance rating forms); and document compliance problems and their resolution.
- **Enforcement**—Regional office staff specify program deficiencies and ordinance violations that are discovered through community contact; support and consult with the community as it corrects and remedies compliance problems; document community contact and followup actions; impose or remove community probation (Regional Director's authority); and recommend to headquarters that a community be

FIGURE 3: FEMA Regional Offices



suspended or reinstated. Regional office staffs also consult and coordinate with the state floodplain manager on NFIP enforcement matters, and support the state in state enforcement actions as needed.

Although FEMA regional offices are subordinate to headquarters, they also have considerable autonomy. Regional staff (including those responsible for compliance) report to the Regional Director, who reports to the Director's office at headquarters, not to a specific program office (like compliance) at headquarters. For the most part regional offices follow the processes and policies set out by the headquarters program staff, but some go their own way and have their own cultures. This means that headquarters program staff cannot always ensure that program policies are implemented as intended. This has been especially true of the compliance program at headquarters, which has operated for most of the last 20 years with an average of three or four staff people, who are responsible for both community eligibility and compliance. Not only is this level of staffing a hindrance to implementation of the compliance program, but also it leaves little opportunity for program development or enhancement.

On the positive side, this arrangement means that regions retain a great deal of flexibility to address compliance problems independently and adapt solutions to state and local needs. Regional staff use their judgment to decide what communities must do to address enforcement problems, and determine when program deficiencies have been corrected and violations remedied to the maximum extent possible. The judgment of the regional office staff is also relied upon in deciding whether a community should be placed on or removed from probation.

The NFIP compliance program guidance does not specify a relationship between the regional office and the states for promotion or monitoring NFIP community compliance. In practice, however, as discussed below, many regional offices also coordinate with and support the states in the conduct of activities under those two approaches (e.g., training and conferences).

3.3.1 Allocation of NFIP Staff in Regional Offices

As of October 2003, there was a total of 136 staff positions (full time equivalents or FTEs) devoted to NFIP-related activities in the regional offices of FEMA.²² This figure includes engineers, administrative support staff, FEMA management, and program specialists, the latter of whom conduct most of the promotion, monitoring, and enforcement for NFIP community compliance.

The number of FTEs in each region varies. Each region has a minimum of six to seven FTEs, the minimum necessary to carry out the program in a region (a branch chief, secretary, one to two engineers, and two to three planners). Beyond that minimum number, regional staff have been allocated according to a calculation of “nationwide activity” occurring in each region. A comprehensive analysis and allocation was done in 1986 and some adjustments have been made since then, based on increased workload resulting from the National Flood Insurance Reform Act of 1994 and similar criteria.

Table 1 displays each region’s NFIP staff level, along with that region’s percentage of nationwide activity (as determined by FEMA in the 1986 staff allocation), regional office staff, participating communities, and flood insurance policies. Assuming that these realities, coupled with the amount of building activity, development, and other factors are reasonably accurate predictors of the level of compliance work that will need to be done in a region, the distribution of staff among the regional offices is a reasonable one. The greatest shares of nationwide activity and policies are in Regions IV and VI, and their current FTE levels of 21 and 20 are the highest of all the regions. Those two regions do not have the most communities of all the regions, but they do rank third and fourth. At the other end of the spectrum, the smallest regional offices are Regions I, VII, VIII, and X, and they all have comparatively low numbers of communities, policies, and activity.

The levels of personnel are important to the effectiveness of the NFIP because if staff levels are insufficient, oversight and compliance can suffer. However, the study team did not discover any ratio or other accepted method by which to determine when the size of compliance staff is adequate. There is no direct correlation between numbers of communities and staff size, for example, because one community with intense development pressure could take as much staff time as 100 small, rural communities. By the same token, a community with several thousand flood insurance policies might not require as much staff time as expected if a large proportion of the policies are for condominium units in high-rise buildings that already have been built to NFIP standards.

The study team concluded that, in its complex staffing allocations, FEMA has appropriately balanced the need to have a presence (at least 7 FTEs) in every region with its limited resources and with the variability among regions in the amount of current and expected compliance work.

Nevertheless, officials in eight regional offices said both staff and resources are insufficient to address the needs of the communities and policyholders. Nearly half a dozen

²² An official at FEMA headquarters indicated that regions use various definitions of what constitutes NFIP-related activities. Some personnel are used for pre-disaster mitigation and grant programs that relate to floods.

TABLE 1: Distribution of NFIP Personnel and Activity among FEMA Regional Offices

Region (# of NFIP staff)	Share of All Nationwide Activity*	Share of All Regional Office NFIP personnel**	Share of All NFIP Communities**	Share of All NFIP Policies**
I (11)	6%	8%	10%	2%
II (13)	7%	10%	10%	7%
III (15)	9%	11%	16%	5%
IV (21)	26%	15%	14%	50%
V (14)	10%	10%	19%	3%
VI (20)	22%	15%	11%	20%
VII (10)	4%	7%	8%	1%
VIII (10)	3%	7%	6%	<1%
IX (13)	10%	10%	3%	8%
X (9)	2%	7%	4%	1%

*As calculated by FEMA for its 1986 allocation of staff, with a formula based on policies in force, claims paid, property at risk, growth in property at risk, level of flood study activity, number of participating communities, number of building permits, and number of variances.

**Totals do not equal 100 because of rounding.

regional officials acknowledged that the regional offices lacked enough staff to conduct compliance activities. This issue is discussed again in Chapter 6 on monitoring.

3.3.2 Workload and Priorities of NFIP Staff

Over the past decade, the headquarters staff responsible for the community compliance program have numbered from two to five FTEs with the usual staffing level being three or four people. At this level of support, according to officials interviewed, oversight of program implementation takes up most staff time. There is little opportunity to address deficiencies in the program framework or develop additional or newer guidance, training, database systems, or other long-term resources, even though those needs are recognized.

Under normal conditions, regional office floodplain management staff have responsibilities under the NFIP besides community compliance, including grant administration and technical assistance for insurance matters. When the study team asked program specialists in four regional offices to estimate the time they spent on compliance activities, they replied that those activities took slightly more than half of their time.

Several FEMA regional and state officials expressed the sentiment that enforcing community compliance with the NFIP is not a priority within FEMA and that this negatively affects the effectiveness of the program. Some officials stated that FEMA's goals—disaster coordination and management—do not fit well with the compliance and enforcement activities of the NFIP.

The study team also encountered comments from regional office staff about being temporarily transferred to non-NFIP related activities, primarily for pre- and post-disaster activities. One program specialist stated that fully half of his time is devoted to non-NFIP work. Some staff reported that when a disaster occurs, all personnel can be pulled off compliance work for months at a time. In some instances the disasters to which NFIP staff are assigned are not even related to flooding.

Some disaster-related activities are directly related to the NFIP, such as assisting with substantial damage assessments or investigating the need for re-mapping after a flood. Further, NFIP staff have an obligation and willingness to help where they can during the response to an emergency. However, disaster response is not an activity envisaged by the National Flood Insurance Act as a use of the flood insurance premiums, which are designated to pay for the NFIP's administrative expenses (including staff salaries). When NFIP staff are routinely assigned other duties, not only do they have less time for their NFIP responsibilities (including compliance) but also flood insurance premiums thus are being used for non-NFIP work.

FEMA was unable to estimate the precise amount of time NFIP staff spend on non-NFIP matters, or the net effect of these reassignments, if any, on the National Flood Insurance Fund. The study team sent an inquiry about this issue to FEMA's Inspector General, but had received no explanation by the time the study concluded.

3.4 Recommendations

Community compliance with NFIP standards is achieved through the combined efforts of local, state, and federal governments. The study team identified several ways in which the effectiveness of the states and FEMA could be strengthened.

Increase the number of FEMA headquarters and regional office staff assigned to compliance work. Additional staff would improve implementation of the compliance program and allow for the development of program enhancements.

Reexamine assignment of NFIP staff to non-NFIP work. FEMA should consider whether NFIP staff are being used appropriately when they are assigned to non-NFIP duties, such as grants administration and disaster response and recovery.

Increase CAP-SSSE funding for compliance work by the states and clarify criteria for funding allocations. State participation is critical to community compliance, but most states rely on federal funds to support their work. Additional staff would improve the operation of the compliance program. Indeed, there is evidence that the addition of a second staff person (in states where there has been only one) results in a considerable increase in state capability (Mittler *et al.* 2006). FEMA needs to make explicit the criteria by which CAP funds are allocated to reinforce to states that CAP-SSSE directly funds compliance activities and encourage the types of activities that are needed.

Hold states accountable for non-completion of compliance work funded under the CAP-SSSE. If state work plans for the CAP are to improve compliance, they need actionable, measurable steps that contribute toward larger goals, and states must complete the work as specified.

4. PROMOTING COMMUNITY COMPLIANCE

The bulk of NFIP compliance resources, both within FEMA and the states, is devoted to the “promotion” component of the NFIP compliance model. The term “promotion” is used here to encompass any aspect of the NFIP that fosters an understanding of flood risks and how the various activities of the NFIP contribute to avoiding damage from floods and recovering from them—at both individual and community levels. Some of the tools used to promote compliance with the NFIP are institutionalized through statutes or regulations; some are the product of activities carried out by FEMA and the states, and some are a combination of both. Most of these tools are based on the assumptions implicit in the NFIP compliance model that people, businesses, and local governments (1) will try to meet the requirements of the NFIP once they are educated about the reasons for the standards; (2) will try to obtain financial benefits that are available under the program (such as lower flood insurance rates); and (3) will try to avoid negative consequences of failure to meet the standards (higher insurance rates, for example, or suspension from the program).

Those fundamental assumptions are the foundation of FEMA’s compliance approach, which emphasizes promoting compliance with the NFIP on its merits. In its guidance materials and subsequent statements, FEMA has stressed its belief that the majority of violations stem from communities’ ignorance of NFIP requirements, failure to understand the rationales behind program requirements, or a lack of technical skills on the part of the floodplain officials in the community (FEMA 1986). Thus FEMA relies heavily on tools that promote both full understanding of the program at the community level and voluntary compliance at the individual level.

The range of tools used by FEMA and the states to promote compliance with the NFIP appears in figure 4. Each of these is discussed in the sections that follow, and an assessment is made of their effectiveness in promoting compliance. Recommendations for improving the tools are made in Section 4.5.

FIGURE 4: Tools that Promote Community Compliance

Technical assistance to communities
community assistance contact (CAC)
community assistance visit (CAV)
procedural guidance and technical publications, response to inquiries
Training
for community staff
for state and FEMA staff
Professional certification of federal, state, and local floodplain managers
Incentives for compliance
insurance availability
insurance rating structure (noncompliant structures pay higher rates)
CRS participation gets community-wide discount
ICC coverage pays for mitigation for individual structures
Disincentives for noncompliance
loss of insurance availability in community
re-rating structure for higher rates
denial of insurance coverage (1316) for individual structure

4.1 Technical Assistance to Communities

In keeping with the assumption that most noncompliance is the result of ignorance about the program, FEMA's primary tool for promoting compliance is the provision of floodplain management assistance services (commonly known as "technical assistance") to the local officials and staff of participating communities, both before noncompliance occurs and in the course of addressing it.

FEMA's goal as stated in the community assistance manual (FEMA 1989) is that every NFIP-participating community be provided with technical assistance and/or contacted to determine if assistance is needed at least once every five years (FEMA 1989). FEMA says this contact can be in the form of a CAC, a community assistance visit (CAV), or another form of direct, one-on-one contact with the community (responding to requests for information, participating in meetings with the community, coordinating with the community on mapping or other issues). By establishing a definite cycle, FEMA's aim was to ensure that "no NFIP community is overlooked" in the provision of floodplain management assistance services (FEMA 1989, p. 1-4). Within this five-year cycle, FEMA expected regional office staff to use their judgment in setting priorities for which communities should receive what level or form of attention and when, depending on factors described below.

To ensure that this technical assistance is offered and/or provided, the FEMA regional offices either assign regional office staff to conduct or offer the assistance services or they assign the duty to states through their contracts with FEMA under the CAP (described above in Section 3.2.3).

4.1.1 Community Assistance Contacts and Community Assistance Visits

The staff of FEMA's regional offices and the state floodplain management offices have direct one-on-one contact with individual communities through three means: CACs; CAVs; and meetings for mapping, ordinance review, or other purposes. CACs and CAVs are the primary means by which communities receive technical assistance tailored to their needs.

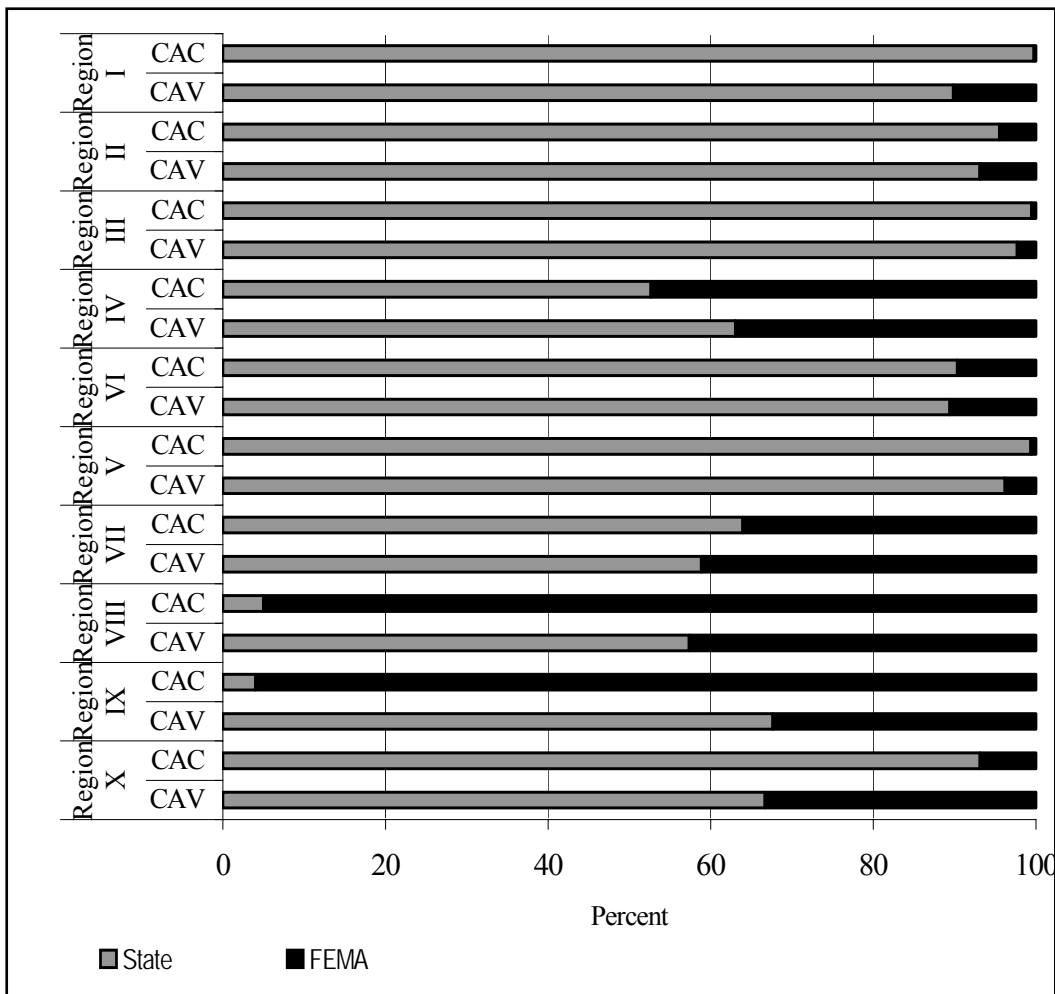
A CAC is a telephone call or brief visit to a community that is used to establish or re-establish contact with a community and determine if any problems or issues exist and to offer community assistance if needed.

A CAV is a scheduled visit to the community that may take anywhere from a few hours for a small community with little building activity to three days or more for a large one with extensive floodplain areas and development pressure. CAVs are the most intensive form of technical assistance provided by FEMA and the states. A CAV includes a tour of the floodplain, meetings with local floodplain management officials, and a thorough examination of a community's ordinance, its files on permits and variances, and other documents. The staff conducting the CAV can then answer the community floodplain manager's questions, explain specific NFIP regulations as needed, and/or provide the community with additional written guidance. The staff conducting the CAV can also recommend (but not require) additional formal training for the local floodplain manager(s).

State Conduct of CACs and CAVs

Although both state and regional office staff conduct CACs and CAVs, states conduct the majority of them in most regions, based on data between 1997 and 2002. Most states and regional offices negotiate the number of CAVs and CACs that will be conducted by each group in their annual CAP-SSSE agreement, based on considerations of their capabilities and needs. In a few instances, states hire contractors to conduct CACs and CAVs. For example, Texas contracts its community assistance education (and monitoring) to an outside engineering firm. Since 1998, Pennsylvania has contracted with County Conservation Districts to conduct approximately 90 percent of its CAVs. Figure 5 shows that states conducted more than 70 percent of the CACs and CAVs that were done during the six-year period. The distribution of CAVs and CACs between regions and states varied by region but favored states overall, with the exception of CACs in Regions VIII and IX. It should be noted that there is no single optimal division of community assistance work between FEMA and the states. Tasks are apportioned annually based on staff levels and other factors specific to the regional offices and the states.

FIGURE 5: Percentage of CAVs and CACs conducted by the States and FEMA Regional Offices, January 1, 1997 to December 31, 2002. Source: CIS and Regional Offices



Frequency of CACs and CAVs

FEMA's goal as stated in the community assistance manual is that every participating community be contacted, visited, and/or provided with technical assistance every five years (FEMA 1989). However, as FEMA guidance admits, "generally, there will not be sufficient staff at the region and state to [conduct a] CAV [in] all communities in the state on a regular basis." Therefore, for both technical assistance (promotion) and monitoring purposes, FEMA recommends that CAVs be prioritized for communities with the most development or those most likely to need technical assistance. Some indicators of this are growth rates, development activity in SFHAs, previous compliance issues, and citizen complaints.

The frequency with which community contact is done is analyzed further below, because it is critical to how well the monitoring phase of the NFIP compliance program functions (see Chapter 5). Data gathered by the study team show that, nationwide, communities are contacted via a CAC or CAV an average of one time every 10 years. This is fairly infrequent contact for a program in which regulations, policies, procedures, and technology are all prone to change, and whose compliance model relies heavily on the communities' understanding of and good faith adherence to its standards.

CACs and CAVs as Technical Assistance

How well CACs and CAVs work to provide technical assistance to communities is difficult to assess. FEMA has provided extensive guidance on what must be covered during the contacts, but the extent to which those procedures are carried out and how effectively varies. The staff person doing the work has a large impact on the quality of the interaction with the community, how thorough the contact or visit is, and the value and accuracy of the information communicated. This is true for at least two reasons. First, the regional office staff members (and states, perhaps to a lesser extent) have disparate backgrounds, from Ph.D.s in engineering to people who started in FEMA as secretaries and were promoted. Second, no standard training is required to ensure that common approaches are used to deliver community assistance.

The study team encountered no criticism from regional office or state staff of the CAV process itself, although there were some suggestions for slight modifications to the list of items covered during a CAV.²³ Both FEMA and state staff appear to be generally satisfied with the approach of making an onsite visit to a community, meeting with staff, inspecting records, touring the floodplain, and other steps as appropriate.

Among the community officials interviewed by the study team the overall attitude toward CAVs could be characterized as one of acceptance of the procedure. One community objected to a CAV's being scheduled for an inconvenient time—after a flood when local staff were already overburdened. One community thought it had been treated "harshly" during a CAV over its one and only variance. These comments are representative of the differing opinions about CAVs expressed by community officials:

- CAVs help the city . . . find problems.

²³ Comprehensive instructions for conducting a CAV are included in FEMA Manual 7810.4, *Guidance for Conducting Community Assistance Contacts and Community Assistance Visits* (FEMA 1989).

- CAVs are a pain. The community doesn't like to be told what to do.
- CAVs can be an inconvenience because of the work involved.
- CAVs are a very thorough review of a community flood management program.

With regard to the provision of technical assistance, most of the community officials interviewed told the study team that the regional office and state staff were helpful and answered their questions accurately and thoroughly in both CACs and CAVs. Some communities mentioned that they had more contact with the state than the regional office, and some said the opposite. There were a few comments from community staff about personality and relationships with the state or regional office person assigned to that community.

CACs and CAVs serve a dual purpose within the NFIP. As is discussed in Chapter 5, besides being tools for providing technical assistance, they are also intended to be used to monitor communities for compliance with NFIP requirements. In a 2003 survey of state NFIP coordinators (ASFPM 2004), half of the states that responded viewed the primary purpose of CACs and CAVs as being the provision of technical assistance, 28 percent responded that the purpose of CAVs was both monitoring and technical assistance, and 20 percent of the states used these visits primarily for monitoring. The FEMA regional office staff interviewed by the study team had a more uniform understanding that the CAVs and CACs they perform serve multiple purposes simultaneously.

Although it is true that the majority of state staff view their role in CAVs and other venues as providing assistance and that some state personnel purposely avoid giving the appearance of “monitoring” or evaluating the community’s compliance, it appears that the opposite may be true sometimes as well. That is, some of the responses from communities indicate that some staff people may be viewing their interaction with the community as an authoritative, “from the top down” action, seeing themselves as using CAVs primarily to find problems with the community’s program and tell the community to fix them, and how. This may work well for monitoring and enforcement purposes, but the community comments show that it is not the most effective technique for providing technical assistance. In its training needs report, FEMA also found that local floodplain managers want on-site training that is non-regulatory in nature. Technical assistance is best provided in an environment where the recipients feel free to admit their ignorance of a subject and ask questions without fear of negative repercussions, but because any violations or program deficiencies discovered during a CAV may lead FEMA to sanction the community, local staff may be afraid to ask questions or may try to conceal their ignorance of some topics instead of admitting a need for assistance. This may lessen the quality of technical assistance that can be provided during the CAV.

One significant drawback of CAVs as they are conducted currently is the fact that more of them cannot be done given the staff and resources available to the FEMA regional offices and the states. This complaint was registered by regional and state staff and even by communities.

As technical assistance, CACs and CAVs when they occur appear to be effective at conveying complex and changing program information to communities. A few of the communities interviewed indicated that they receive conflicting information at times (sometimes within a regional office, sometimes between the regional office and the state, sometimes between

the regional office and FEMA headquarters). But judging by the opinion of most of the local respondents, CACs and CAVs conducted both by regional office staff and by state staff are fulfilling the purpose of providing technical assistance. The drawbacks of CAVs and CACs include variability in quality that results from the personality and preferences of the staff person doing the work, the fact that monitoring and enforcement functions are combined within a single community visit, and the inability of FEMA and the states to provide more frequent CAVs to communities.

4.1.2 Other Technical Assistance

Procedural Guidance and Technical Publications

FEMA has issued an abundance of guidance for regional offices, states, and participating communities to ensure the consistent interpretation of NFIP policy. Written guidance includes various policy memos and technical bulletins as well as two guidance manuals, described below. FEMA regional office staff repeatedly told the study team that these two books, combined with the *Code of Federal Regulations*, were their primary sources for guidance. Additional guidance related to policy interpretation has been issued through various memos and technical bulletins.

NFIP Guidance for Conducting CACs and CAVs (FEMA 1989) is a guide for conducting CACs and CAVs and a training document for staff who are not familiar with those procedures. However, the document does not discuss major relevant issues that have arisen since its production in 1989. Foremost among these is the responsibility of regional office and state floodplain management staff to enter CAC and CAV data into CIS or how staff can use CIS as a tool for promoting or monitoring compliance. Nor does the guidance manual discuss the CRS although FEMA has stated that it wants CAVs conducted in CRS communities on a five-year cycle (FEMA Inspector General 2002).

The *NFIP Community Compliance Program Guidance* (FEMA 1986) sets out policies and procedures for taking enforcement action against noncompliant communities and structures. Because the document was created in 1986, it did not include discussion of CRS retrograde (a reduction in the community's CRS rating, which can include its removal from the CRS) as an enforcement option, nor did it reference use of the CIS. An August 8, 2002 memorandum to the FEMA regional offices established a "Compliance Policy for CRS" that included a CAV policy and a procedure for retrograding non-compliant CRS communities.

Other Community Contact

Other means by which regional office and state staff interact with communities include meetings about mapping, assistance in updating floodplain management ordinances, short or informal visits to a community, and small workshops that allow for detailed discussion of the specific floodplain management situations of the communities in attendance. According to FEMA's guidance, such interactions with a community are sufficient to "count" as a contact needed to meet the goal of reaching every NFIP community every five years.

Data are not available to determine to extent to which communities are being contacted through other types of technical assistance. As an example, although the data show that only 42 percent of communities in Region V are contacted via formal CAC or CAV in an average five-year time period, staff at Region V told the study team that they spend a large percentage of

every day on the phone with communities answering questions and providing technical assistance. They said that they do not record these contacts since they do not consider them formal CACs. Likewise, the study team found paper records (such as letters to communities) of regional office staff and state floodplain management staff's having visited communities and providing technical assistance, but the regions often did not record these visits in any systematic way (as they would CACs and CAVs).

Finally, FEMA does not compile records of the contacts made with communities during local workshops. Although some states record the number of communities that attend state-delivered training, these records are not compiled by FEMA or recorded with other community information in CIS. A lack of formal recordkeeping about some types of contact with regulated entities is not unusual in regulatory programs. It has the advantage in the case of the NFIP of allowing the flexibility to provide technical assistance without regulatory pressure. This is a common feature in environmental regulatory compliance, but it makes evaluation of the impact of such informal contacts more difficult.

4.2 Training

Training is a tool for promoting community compliance because it furthers and deepens the understanding of the requirements and goals of the NFIP. If responsible parties understand the reasons for the program and how the requirements help achieve its goals, the thinking goes, they will be more likely to comply with them. Training on the NFIP is useful for two distinct audiences: (1) the community floodplain managers who must administer the NFIP-based local ordinance, and (2) the FEMA regional office and state floodplain management staff who are responsible for educating and monitoring the communities. This section addresses the question of whether available training options meet the needs of those two audiences.

4.2.1 FEMA's Training Offerings

Training for all floodplain management staff is available from multiple sources. FEMA's national training center, the Emergency Management Institute (EMI) in Emmitsburg, Maryland, and home study courses produced by EMI offer training to regional, state, and local floodplain officials. Additional training for community staff, funded by FEMA, is provided at local training events by FEMA regional office or state staff. Training and workshops on the NFIP and related issues also are offered at the conferences of the ASFPM and state floodplain management associations. The main sources for training are listed below:

- **Resident Courses at EMI:** EMI has consistently offered two courses that teach audiences how to comply with NFIP regulations: "Managing Floodplain Development through the NFIP" and "The Community Rating System." The courses are four days each, and are available several times per year to anyone involved in floodplain management. They are free of charge and travel stipends are available. "Managing Floodplain Development through the NFIP" is aimed at community floodplain managers, although anyone available in floodplain management can enroll. Topics addressed include an explanation of NFIP requirements, the strategies and tools available for floodplain managers, the use of data in the implementation of floodplain management regulations, floodplain permit review and enforcement procedures, and the relationship between flood insurance and floodplain management.

The “Community Rating System” course describes how communities can receive credit in the CRS for activities that go beyond the NFIP’s minimum requirements.

- **Field-Deployed EMI Courses:** “Managing Floodplain Development through the NFIP” is sometimes field-deployed outside of the national training center. It is up to individual instructors to initiate delivery of this course in their regions. Instructors are usually FEMA regional office or state floodplain management staff that have taken and possibly taught the course at EMI. State floodplain management staff in about 10 states in Regions III, IV, and VI field deploy this basic course.
- **Training Provided by ASFPM:** The ASFPM provides on-line training in floodplain management. ASFPM also sponsors an annual conference at which floodplain management training is provided.
- **Courses Developed by FEMA Regional Office and the States:** FEMA regional office and state floodplain management staff in almost all states and regional offices have developed and delivered training about NFIP requirements and how to achieve compliance. Sometimes these courses are based on “Managing Floodplain Development through the NFIP.” Sometimes they are short (one-day or less) courses on specific floodplain management subjects. Examples of courses that have been offered in various regions are “Floodplain Management 101,” “State-Specific Floodplain Management 101,” “Mitigation Tools,” “Floodplain Regulations 101,” “Compliance and Enforcement Strategies,” “Post-Flood Disaster Assistance,” and “Substantial Damage/Improvement.”
- **EMI Home Study Series:** EMI developed a home-study version of “Managing Floodplain Development through the NFIP,” covering the same material as the EMI resident course of the same name. Upon request, the course was delivered to students to study at their leisure. Students could then take a test and send the results to EMI to receive course credit. According to EMI records, close to 2,000 people requested the course from EMI and about 30 percent completed it and passed the test. Although EMI no longer offers the course, FEMA and other floodplain management groups such as ASFPM and the State of Illinois have made versions of the course available on-line. FEMA has reconfigured the course materials into a desk reference and study guide that can be used for independent study.

4.2.2 Training for Regional Office and State Staff

There is no standard training program from the NFIP staff responsible for monitoring or enforcing compliance. In addition, as noted above, the prior experience of those responsible for compliance varies widely—from clerical workers with secondary education who have been promoted within FEMA to engineers and planners with graduate degrees. FEMA thus appears not to have any formal or minimum requirements for its compliance staff.

Many, but not all, FEMA regional office staff have attended courses at EMI. About half of the regional office staff who told the study team that they attended training at EMI said that they attended more than one course, including “Managing Floodplain Development Through the NFIP,” “The Community Rating System,” and courses for engineers such as those on retrofitting

or coastal construction. Regional office staff also stressed their reliance on on-the-job training or mentoring. Some regional offices told the study team that they train new FEMA program specialists by matching them with a senior FEMA program specialist mentor. Many mentioned this one-on-one assistance in addition to formal training they took at EMI, but some staff had only “on-the-job” training.

State floodplain coordinators also attend training at EMI and/or at state agency or ASFPM conferences and workshops. In many states, some of the costs for state personnel participation in training and workshops is supported by FEMA’s Community Assistance Program. Although the number of state staff who attended NFIP-related training is not available, in response to a survey by the ASFPM, 47 state NFIP Coordinators indicated that their agency “encouraged” them to attend FEMA-sponsored classes and workshops and 43 indicated that participation in state- and/or ASFPM-sponsored training, conferences, and workshops was encouraged (ASFPM 2004). In addition, 30 state floodplain management offices have staff who are certified in floodplain management by the ASFPM or a state association accredited by ASFPM. An examination is required for certification, and the study materials recommended and made available by the ASFPM as preparation for the exam include the materials from the home-study version of “Managing Floodplain Development through the NFIP.”

An important deficiency in training to date has been that courses offered at EMI have taught local floodplain managers how to be compliant with the NFIP, but have not trained regional office and state floodplain management staff how to monitor and enforce community compliance. Noting this gap in training, several regional office staff expressed a need for training that is focused on procedures, such as how to conduct a visit to a community, how to coordinate NFIP activities in the states, and how to use CIS. Likewise, staff at FEMA headquarters expressed a wish that regional office staff receive more training on the proper way to document community violations so that enforcement actions can proceed without delay and/or repetition of effort.

FEMA introduced a new course aimed specifically at FEMA program specialists and state floodplain coordinators called “Floodplain Management and Community Compliance for State and FEMA Staff” at a 2003 workshop and delivered the course to regional and state staff at the 2004 and 2005 ASFPM conferences. The course has been distributed on CD to its regional offices for their use in training and to deliver to state floodplain coordinators.

FEMA is developing four advanced floodplain management courses (1) “Floodplain Management Implications associated with Letters of Map Change,” “NFIP Regulations—Advanced”; “The Roles and Responsibilities of the Local Floodplain Administrator,” and “Post-disaster Floodplain Management.” The four courses will be pilot tested at EMI during the summer of 2006. FEMA’s plan is to deliver the courses in the field rather than at EMI. In addition, EMI is now offering a “train-the-trainer” course specifically for NFIP classes. The goal is to develop a cadre of instructors who would field deploy both the basic and advanced courses, expanding the number of state and local personnel that can be reached with training.

Both FEMA’s study of training needs (FEMA 2003) and the study team’s interviews found that many state and regional staff want to participate in regular meetings to share experiences, training, and “best practices” for achieving community compliance. FEMA (2003) recommended that it sponsor opportunities for regional office and state floodplain management

staff to meet, perhaps at an annual conference at EMI. In the past, FEMA sponsored conferences of this type, and regional office staff told the study team that these meetings promoted consistency in NFIP compliance work among the regions. Several regional offices told the study team that they have regular meetings of NFIP staff within the regions where staff can discuss their compliance work and share best practices. Regional staff mentioned other possibilities for sharing experiences, such as regular conference calls to complement or even replace regular workshops at EMI.

In an enforcement/compliance model heavily weighted toward promoting compliance through the provision of technical assistance—as the NFIP model is—it is essential that the personnel responsible for providing that assistance have as much expertise as possible. However, the study team found some deficiencies in FEMA’s provision of training for FEMA and state floodplain management staff. Even basic training in the NFIP is not required of state or regional staff, and advanced training in monitoring and compliance procedures has up until now been offered only sporadically. Further, state and FEMA floodplain management staff lack opportunities to communicate and share best practices among themselves through national conference calls, workshops, or retreats. These conditions are detrimental to training and educating FEMA and state officials in floodplain management and NFIP policy.

4.2.3 Training for Community Staff

Communities cannot be compliant with the NFIP if their officials and staff do not understand its requirements. Formal training can provide community floodplain managers with a comprehensive and consistent message about what FEMA expects of communities to be compliant with the NFIP’s requirements. Training of this type can be delivered without the pressure of monitoring and enforcement (unlike technical assistance provided during community visits or other formats), and therefore provides a venue for community floodplain management staff to admit ignorance and ask questions about floodplain management in their communities. Such training sessions also offer an opportunity to acquaint staff from various communities with each other and with the FEMA or state staff leading the training. These introductions open avenues for the community staff to get additional advice later.

Due to frequent staff turnover in many communities there is a continuous need for basic training, which far outweighs any need for more advanced training. In interviews with AIR, FEMA regional office staff likewise identified a need for basic training in many communities. Some FEMA regional office staff commented that many local floodplain managers did not have the skills or knowledge to be compliant.

The majority of communities do not attend training at EMI. Of the people who attended “Managing Floodplain Development through the NFIP” at EMI in 2002, 86 were from a local (town or county) government. An additional 130 local staff members attended the course when it was delivered off-site. Those attendees represented fewer than 1 percent of communities nationwide. Although communities do not have to pay tuition at EMI, only communities that have the resources available to cover the absent floodplain manager’s duties for a week send representatives to classes there. According to FEMA (2003), those who are able to attend training at EMI are usually full-time, professional employees of large metropolitan areas—those least likely to need training. It cannot reasonably be expected that small communities with fewer

than 20 flood insurance policies (about two-thirds of all NFIP communities) would expend time and resources to send their staff to EMI.

Because EMI is not a practical option for most communities, those that do receive formal training usually do so through locally delivered classes and workshops. In its 2003 survey of state floodplain managers, ASFPM asked the states to report on the training that they provide to communities. Thirty-nine states reported that, in 2002, the collectively trained 8,881 people representing 3,051 communities (16 percent of all participating communities nationwide in 2002). Table 2 presents responses to the ASFPM survey from states that delivered training at local events in 2002.

Only 10 states reported to the ASFPM that they did not train any communities in 2002. Four states reported training more than 50 percent of their communities in that single year and 16 states trained 20 percent of their communities. If those states continue to conduct training at a similar rate, they would train every participating community in their states within five years—far more than can be reached through EMI-based courses. The need for training would continue due to the frequent turnover of floodplain management staff in many communities.

According to FEMA's report on training needs (FEMA 2003) the states said the biggest challenge in trying to provide training to NFIP communities is that NFIP training is not required. It is difficult to convince communities to attend training and the states saw a need to mandate training for local building officials in participating communities. The communities themselves expressed support for the recommendation. Nearly all of the communities interviewed for the study "agreed that a minimum level of training in the NFIP and floodplain management should be required/mandated by the NFIP regulations."

Many of the states and communities interviewed assumed that a requirement for training in the NFIP would come from FEMA, but there is no such requirement in the NFIP regulations. Further, it is not clear that FEMA has legal authority to mandate training. A FEMA staff member told the study team that FEMA could not require all communities to attend training because such a requirement would create an unfair burden on communities with few (or no) policies or little development, especially considering the limited availability of local training opportunities in many states. FEMA further told the study team that training requirements should be enacted only at the state level, not the federal level. Three states, Arkansas, New Mexico, and Oklahoma, have moved on their own to legislate requirements for training or floodplain management certification for community staff. These states may serve as models for other states to enact similar requirements.

The Community Rating System (CRS) provides incentives to encourage and reward training by providing credits that can earn policyholders discounts on their flood insurance premiums. Communities that participate in the CRS can receive up to 75 points of CRS credit for training (including state training of insurance agents). Because a community needs 500 points to receive discounts on policyholders' premiums, 75 points can be a significant contribution. About nine percent of CRS communities (85 communities) received credit in May 2003 for attending training at EMI or having certified floodplain managers (CFMs) on staff. A full discussion of the CRS is provided in Section 7.3.

TABLE 2: Percentage of States' Communities Represented at State-provided Training, 2002

State	Percentage of Communities at State-provided Training in 2002	State	Percentage of Communities at State-provided Training in 2002
AK	52	MS	25
AL	4	MT	10
AR	41	NE	5
CA	49	NH	16
CO	22	NJ	9
CT	28	NM	23
DE	47	NV	7
GA	9	NY	7
ID	25	OH	2
IL	38	OK	17
IN	11	OR	12
KS	39	PA	4
KY	10	RI	100
LA	14	SD	1
MA	60	TN	34
MD	21	TX	7
ME	21	WA	17
MI	26	WI	2
MN	28	WV	10
MO	53		

NOTE: No data on training were available for VI, IA, and WY

SOURCE: ASFPM (2004); Bureau of State Fact Sheet (Participating communities, December 2002)

4.2.4 Training as a Tool for Promoting Compliance

Although FEMA places a high importance on training, it does not require NFIP training for its staff, state floodplain coordinators, or community floodplain managers. Nor does FEMA monitor or standardize training and technical assistance developed and delivered by the FEMA program specialists, the states, or other entities independent of EMI. FEMA's basic floodplain management course, originally delivered at EMI has now been adapted for field deployment and independent study. This may be a useful model through which training can be expanded in the future: curriculum materials are developed and tested by FEMA and EMI and then made available in a variety of formats for states, regional offices, communities, and individuals to use in a more convenient forum. There is no longer a regular vehicle through which FEMA headquarters and regional office staff and state staff who are responsible for providing technical assistance (and monitoring) to communities can meet and share experiences among themselves, but interviews indicated widespread support for such an opportunity.

A full analysis of the effects of training on community compliance with the NFIP was not possible for this report because FEMA does not systematically collect the data necessary for such an analysis. In Appendix A, recommendations are made of ways to measure the effects of training and technical assistance on compliance. More research must be done to determine the effect that training and certification have on compliance in communities.

4.3 Professional Certification in Floodplain Management

One of the biggest steps taken to spread and standardize training for practicing floodplain managers at all levels is the Certified Floodplain Management (CFM[®]) program developed and administered by the ASFPM. This formalized procedure, begun in 1999, allows individuals to demonstrate that they have a standardized level of knowledge and skills and a commitment to continual education in floodplain management. The program encourages floodplain managers and other interested parties to attend training or study independently.

Staff members from FEMA headquarters and from EMI participated in the development of the training materials and examination for the CFM program. As of June 2006 there were 3,305 CFMs nationwide, including federal agency staff, state agency personnel, local floodplain managers, and experts from academia, the private sector, and other organizations. Six states have developed their own exams, incorporating state and national (NFIP) standards, and received ASFPM accreditation. About half of the nation's CFMs have received their accreditation through a state program. FEMA and several other federal agencies have provided financial support in establishing and operating this certification program.

Certification has three requirements. To become certified, an individual must pass an exam that tests his or her knowledge of floodplain management. To maintain certification, the individual must attend floodplain management training (that can include web-based or home-study courses) and compile a specified number of continuing education credits every two years. Finally, the individual must pay a fee for initial certification and biennial renewal.

New Mexico Requires Localities to Hire CFMs to Administer Community Floodplain Ordinances

In 2001, New Mexico passed a law requiring that every NFIP-participating community designate a floodplain manager certified by the state to administer its ordinance. The community must either have a certified floodplain manager on staff or designate a floodplain manager from a neighboring community to administer its ordinance. The state established a deadline of December 31, 2002 for all communities to meet this requirement but did not establish a penalty for failure to do so. The law has led to the certification of a large number of local floodplain managers. As of September 2004, about 78 percent of participating communities in New Mexico had met the requirement to certify their floodplain managers. A state floodplain management staff member in New Mexico expressed hope that, through continued discussions with communities and by continuing to offer local opportunities to receive training and certification, the state could convince the remaining communities to receive certification for their floodplain managers.

The certification program furthers the professionalism of floodplain managers nationwide by enhancing the level of expertise not only of those who are administering local ordinances but also those who are providing training, guidance, and technical assistance to those local personnel. Professional certification thus helps spread full understanding and appreciation of the NFIP, and promote compliance with its requirements.

Because certification was only begun in 1999, it is too soon to determine what impact professional certification has on compliance with the NFIP. However, there is anecdotal evidence that it raises awareness of flood hazards and the importance of managing them at the local level. For example, the New Mexico legislature was sufficiently convinced that better local performance in floodplain management would accrue from certification that it made certification mandatory for its local administrators (see box).

A related contributor to training for floodplain managers are the state and regional professional associations of floodplain managers, sometimes combined with associations for hazards managers and/or stormwater managers. According to the ASFPM, in 2006 there were 41 states with associations, including several states in regional associations. As noted by Mittler *et al.* (2006), these groups play a critical role in supplementing the resources of states and communities, providing training, and offering a non-governmental, peer-to-peer information source. The ASFPM has been instrumental in the development of these associations, and FEMA has been supportive of these efforts. Continued support, in the form of providing speakers, hosting workshops, and recognizing contributions and feedback from association leaders will contribute to the level of training and professionalism of floodplain managers at all levels.

4.4. Incentives and Disincentives to Promote Compliance

Besides the training and technical assistance tools FEMA and the states use to promote compliance, there are several incentives and disincentives built into the NFIP that operate indirectly to promote community compliance. These insurance-based mechanisms are specifically referenced in the *NFIP Community Compliance Program Guidance*, which states that one goal of the compliance program is to “maximize the use of the existing NFIP program structure,” noting that the floodplain management and flood insurance components of the program were intended to be mutually supportive (FEMA 1986, p. 1-1).

The insurance tools were examined in other substudies under the NFIP Evaluation, so they are not evaluated in this report. However, they are described briefly below because they are an integral part of the framework of the NFIP. Because they influence individual and community-level behavior (such as purchasing flood insurance or investing time and effort to obtain lower rates), they contribute—albeit in an unquantified way—to community compliance. It should also be noted that insurance incentives and disincentives only operate if the community is eligible for flood insurance, that is, if its floodplain management program is operating in compliance with the NFIP.

4.4.1 Insurance Availability and the Insurance Rating Structure

The first incentive is the availability of flood insurance to residents of communities that participate in the program. Without the NFIP, people would not be able to purchase insurance—an important financial protection to the owner of any home or business. The assumption is that communities are pressured by their constituents to join the NFIP and, by extension, to remain in good standing with it, so that flood insurance will remain available.

A second, related incentive is that the flood insurance rates are established in part on a building’s compliance with the NFIP standards. Buildings that are not built to proper standards are at greater risk of being flooded and therefore cost more to insure than those that are constructed properly. Theoretically, individuals who are building a new structure (or improving an old one) have an incentive to obtain the lowest possible rate by insisting that their structure comply with or exceed NFIP standards (as incorporated into the local ordinance). Individuals who find themselves in the position of having expensive flood insurance premiums because of the community’s failure to adequately administer appropriate regulations, the thinking goes, will express their displeasure to their local officials resulting, over time, in a community that pays proper attention to its compliance with the NFIP.

Conversely, once a community joins the NFIP and makes flood insurance available to its residents, the prospect of losing that ability to purchase insurance operates as a disincentive to ignoring the community's responsibilities under the NFIP. Similarly, the fact that the flood insurance rates for a noncompliant structure will be based on its higher flood risk discourages individuals and developers from circumventing building standards.

4.4.2 Premium Discounts for CRS Communities

An additional incentive beyond the availability of flood insurance is the discount in premiums that is provided to policyholders in communities participating in the Community Rating System. Communities in the CRS are those whose floodplain management programs exceed NFIP minimum standards in certain specified ways. In exchange for this "advanced" floodplain management approach, the NFIP reduces the annual flood insurance premiums in that community by 5 to 45%, depending on the extent of the CRS community's flood reduction activities.

In addition to the discount received by policyholders, the recognition that communities receive when they participate in the CRS, and improve their classification within it (resulting in an incremental increase in the discount) promotes compliance by furthering the understanding and acceptance of sound floodplain management.

Compliance in CRS communities is examined in Section 7.3.

4.4.3 Increased Cost of Compliance (ICC) Coverage

Increased Cost of Compliance (ICC) insurance coverage provides property owners with up to \$30,000²⁴ to bring their substantially damaged structures into compliance, if needed, after the community has declared the structure substantially damaged.²⁵ Such damage does not have to be the result of a presidentially declared disaster. Compliance activities eligible for an ICC claim payment include floodproofing, elevating, relocating, or demolishing (or a combination of these activities) an insured structure.

All Standard Flood Insurance Policies issued or renewed since June 1, 1997 contain ICC coverage. The study team found that the funding was not widely used during its first 6 years of existence, possibly for reasons explained in the discussion on substantial damage in Section 7.1. In recent years, ICC claims (and their accompanying use for mitigation) have increased. According to data from FEMA, although only about 1,000 ICC claims had been paid from 1997

²⁴ The amount paid by the NFIP under ICC coverage is in addition to the amount of coverage selected by the policyholder under the Standard Flood Insurance Policy. However, the total amount of the claim payment (i.e., property coverage plus ICC coverage) cannot exceed the maximum amount allowed under the program (currently \$250,000 for a residential structure).

²⁵ Policyholders owning repetitive loss properties, not declared substantially damaged, can make an ICC claim only if their homes are located in a state or participating community that has adopted and currently enforces a repetitive loss provision or a cumulative substantial damage provision in its floodplain management ordinance or regulations. A repetitive loss structure is "a building covered by a contract for flood insurance that has incurred flood-related damage on 2 occasions during a 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25% of the market value of the building at the time of each such flood event."

to 2003, that number tripled in the next two years. As of the end of Fiscal Year 2005, the NFIP had paid 3,209 claims under the ICC coverage to substantially damaged or non-substantially damaged repetitive loss structures, for a total of more than \$59 million.

4.4.4 Denial of Insurance Coverage

When a structure is in violation of the local ordinance, the community has the option of making a declaration under Section 1316 of the National Flood Insurance Act that the structure is not eligible for flood insurance. A structure that cannot be insured cannot secure a mortgage from a federally regulated lender and is ineligible for other grants, loans, or guarantees made by federal agencies for acquisition or construction related to the structure. If the uninsured building is damaged in a flood, no federal disaster assistance is available to rebuild or repair. The disadvantages that would be brought about by a Section 1316 declaration act as disincentives to actions (or inaction) that might otherwise be chosen to avoid compliance with the NFIP.

The way in which Section 1316 declarations are used in NFIP enforcement is discussed in Section 6.2.3.

4.5 Recommendations for Promoting Compliance

FEMA should update its two general guidance documents. These two manuals, *NFIP Community Compliance Program Guidance* (1986) and *NFIP Guidance for Conducting CACs and CAVs* (1989) do not reflect the many changes that have been made to the NFIP since the 1980s. Although FEMA has explained these changes in other materials (e.g., policy memos, technical bulletins, EMI course materials), a single comprehensive guide for compliance work would help eliminate confusion and errors.

FEMA and the states should continue to use the CAP-SSSE funding to deliver training to community staff and make sure some CAP-SSSE funds are dedicated for such a purpose in contracts. In each annual CAP/SSSE, contracts between the states and FEMA, a task should be included that calls for training communities. FEMA should encourage those states that do not provide any training for their communities to include it in their CAP workplans.

FEMA should continue its support of training for local staff, state training requirements, certification of local floodplain managers, and the formation of state and regional professional associations. Mandatory training and/or certification of community floodplain managers through national or, more likely, state-by-state legislative changes would promote local awareness of NFIP requirements and knowledge of tools available to achieve compliance. FEMA can provide incentives for communities to attend training by supporting state training or certification requirements and by encouraging communities to enter the CRS, which offers incentives for communities to attend training. Associations can be supported through the provision of speakers, hosting workshops, and offering feedback to association representatives.

FEMA should require that all regional compliance staff attend standardized NFIP training. Training should be delivered at centralized locations (such as EMI or the annual ASFPM conference) so that different states and regional offices will be represented and learn from each other.

States should consider requiring professional certification of their local floodplain management officials. Such legislation would foster local knowledge of NFIP requirements and thus promote community compliance.

FEMA should develop training courses and materials on compliance for state and regional compliance officials (and also for interested communities). There is need and desire for better, more standardized understanding of monitoring techniques, how to document violations, and process enforcement actions.

State and FEMA regional staff should be encouraged to meet and share “best practices.” FEMA should continue to support opportunities for state and regional staff to meet and learn from each other, either in formal workshops at EMI or in regularly scheduled informal meetings or conference calls.

The effect of training and technical assistance on community compliance should be measured. FEMA records do not currently contain the data necessary to measure the effect of training and technical assistance on community compliance. The study team has outlined a method for improving data collection and determining the effects of training, and included that information in Appendix A.

FEMA should issue additional guidance on and further publicize the ICC coverage. A concerted effort is needed to provide information to community members after a flood detailing who is eligible to make a claim on their ICC coverage, how to make a claim, and the purposes for which ICC money can be used. This incentive to compliance will only operate when communities and property owners are aware of it.

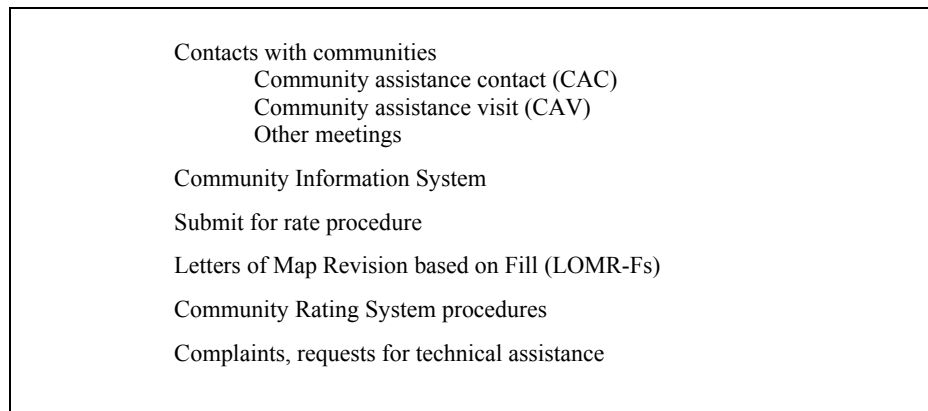
The indicators of the need for technical assistance should be tracked more closely. Including language on the biennial report form asking communities to note whether they have had a change in floodplain management staff is one way to track turnover in local personnel, which may indicate the need for contact with the community. This would be particularly effective if the information were then entered into the CIS so that FEMA and state staff can quickly access it. Another option would be for each regional office and state to develop its own mandatory periodic email reporting or communicating tool, which could be used no less than annually to more quickly gather information on staff turnover or other factors that the regional office or state considers significant for their communities.

5. MONITORING COMMUNITY COMPLIANCE WITH THE NFIP

Central to any compliance program are means by which the people or entities responsible for ensuring compliance maintain an awareness of the extent to which program standards are being met. In this report the term “monitoring” is used to describe collectively all the activities under the NFIP that help keep FEMA headquarters, FEMA regional offices, and the states apprised of floodplain management in the communities. These activities include both remote means of monitoring (such as using computer systems to track relevant NFIP data), sharing information, and integrating procedures among components of the NFIP, as well as encounters with local officials and visits to communities that are intended to seek out more detailed information about a community’s compliance.

The tools employed by FEMA and the states in this component of the compliance program include on-site and remote measures and screening mechanisms through which potential problems are singled out (figure 6). Each of these tools is discussed and analyzed in this chapter and its effectiveness in monitoring assessed. The chapter concludes with recommendations for improving the monitoring component of the NFIP compliance model.

FIGURE 6: Tools for Monitoring Community Compliance



5.1 Contact with Communities

Direct one-on-one contact with community floodplain management officials is the most thorough and effective way of monitoring a single community to determine its compliance with NFIP criteria, and is a legally required precursor to any enforcement action that may be necessary (discussed in Chapter 6).

As noted in the discussion on technical assistance (Section 4.1, above), the staff of FEMA’s regional offices and the state floodplain management offices have direct one-on-one contact with individual communities through three means: CACs; CAVs; and meetings for mapping, ordinance review, or other purposes. CAVs are the only types of contact in which it is standard practice to visit the community and conduct a thorough investigation of all aspects of the community’s floodplain management program (including conducting a field visit in which buildings are inspected for compliance). CAVs are, therefore, incomparable tools for monitoring community compliance. A CAC is used to establish or re-establish contact with a community as a screening tool for the purpose of determining if any problems or issues may exist sufficient to

prioritize for a CAV and to offer a community assistance if necessary. CACs can be conducted by means of a telephone call or brief visit. Their role in monitoring is usually as a screening tool. That is, it may be possible from a CAC for a regional office or state staff to determine that there may well be compliance problems in a community and thus a CAV or other onsite visit should be scheduled. However, it is not possible from a CAC to conclude that a community has no compliance problems or violations.

Because limited resources dictate that not all communities can be visited frequently, for monitoring purposes (as for technical assistance), FEMA recommends that CAVs and CACs be prioritized for communities with the most development or the most likelihood of compliance problems. States and regions are urged to consider factors such as high growth rates, development activity in SFHAs, potential compliance issues identified through remote means (such as submit-to-rate insurance applications, the LOMR process, or repetitive loss lists), and citizen complaints.

To be effective as a monitoring tool, contact with communities—whatever form it takes—must be regular and frequent enough to assure that noncompliant activities are detected, and it should be kept in mind that as communities change, compliance problems can crop up where none existed before. FEMA’s guidance for conducting CACs and CAVs states that “ideally, each fiscal year some type of contact should be made with all” NFIP communities during which “programs are assessed and assistance provided.” However, it acknowledges that such a task is “virtually impossible given limited resources” (FEMA 1989, p. 1-3). The guidance goes on to establish a goal that every participating community be contacted or visited every five years. This should be attainable, according to FEMA headquarters staff, through a combination of CACs, CAVs, and all the other community assessment and assistance activities conducted (meetings and consultation on mapping, ordinance meetings, training, workshops, etc.).

It was not clear to the study team how FEMA arrived at the five-year time frame as a goal, given that allocations of regional office personnel are fairly steady and the amount of state assistance obtained through the CAP-SSSE is predictable. It may be preferable for FEMA to set an attainable goal by working backwards from the rate of coverage of communities that is feasible, given available staff, and calculate the number of years it would take to reach each community. That number of years might be different for each region or for different categories of community. Otherwise, the goal is not as useful as it could be.

There is some basis for considering a five-year cycle reasonable, although it did not exist when FEMA issued its guidance. In a survey of state floodplain managers, the ASFPM asked how frequently communities should be “monitored.” The average of the states’ responses was this: every 2.8 years under ideal circumstances (no constraints in funding or staff); every two years if the community had a history of compliance problems or was experiencing rapid growth; and every 4.5 years if the community had no development pressure. This suggests that FEMA’s five-year goal may be just barely reasonable when it is coupled with the agency’s guidance that certain communities be given priority in scheduling CAVs, thus putting them ahead of the routine five-year schedule (those with rapid growth or development in floodplains, past compliance problems, or citizen complaints).

To determine whether communities are actually contacted at this rate in accord with FEMA’s written policy (a CAC, CAV, or other contact every five years), the study team asked

each FEMA regional office to supply the number of CACs and CAVs conducted by regional office staff, state staff, or others from January 1997 to December 2002 (data are not available on the number of other types of contacts). Table 2 shows the average number of CACs and CAVs conducted per year from 1997 through 2002. To cover all communities within a five-year period, each region would have to have contact with an average of 20 percent of its communities each year. Assuming each community was contacted only once from 1997 to 2002 (an assumption that probably overestimates the percentage of communities contacted), it can be seen that almost all regions fell short of full coverage of their communities in this five-year period.

The best situation is that of Region VIII. At the rates shown in the table, it would take the Region VIII office and states no more than five years to contact every community in their region via a CAC or CAV. At the other extreme, no fewer than 20 years would pass before every community in Region III or in Region VII were contacted. The nationwide average for the length of the cycle for community contact is about 10 years. This confirms the sentiment expressed by many regional office staff to the study team that the five-year goal for everyone was unattainable and therefore served to frustrate rather than motivate them to contact as many communities as possible.

TABLE 2: Community Assistance Contacts and Community Assistance Visits Conducted in NFIP communities by All Sources, by Region, 1997–2002

Region	Number of Participating Communities, 1999 ¹	Average Number of CACs Conducted per Year ²	Average Number of CAVs Conducted per Year ²	Average Percentage of Region's Communities Contacted per Year
I	1,896	65	105	9%
II	2,013	81	43	6%
III	3,135	37	75	4%
IV	2,609	276	92	14%
V	3,646	126	180	8%
VI	2,058	155	107	13%
VII	1,627	53	6	4%
VIII	1,093	130	81	19%
IX	644	8	81	14%
X	720	19	59	10%
Nationwide	19,441	950	827	9%
¹ December 31, 1999 is the midpoint between January 1997 and December 2002. ² The total may over-represent the number of communities assessed because single communities may have been contacted multiple times through various means.				

The piece of information missing from this analysis is the number of “other” contacts that communities receive. FEMA told the study team that systematic records are not kept of all these interactions with communities, although individual staff members may keep their own notes or memos of such contacts. Thus it is not possible to tell exactly how frequently communities

receive some other sort of contact with the state or a regional office representative. However, contacts that are not recorded are of minimal value in monitoring because they leave no basis for conducting follow-up actions that may be necessary nor do they provide documentation that a certain community has been contacted and thus may be removed from the schedule for future contacts. That means that those “other” contacts should not be counted in the monitoring scheme until and unless they are systematically recorded. So the figures calculated by the study team above probably constitute a fairly accurate record of the monitoring that can be counted toward the five-year goal. In any case, “other” contacts that are made with communities, although useful, cannot be considered as effective as a CAV or CAC in assessing compliance because they have different objectives.

Even if each community could be reached once in five years, it is not clear that that is frequent enough to avert compliance problems or to address them before they become severe. The judgment of the states as expressed above is that the optimal rate of community contact ranges from two to three years and only communities with little or no development pressure should be allowed to wait almost five years between contacts.

The study team encountered confusion on the part of the regional office staff about their responsibility for meeting FEMA’s five-year goal. Many regional office staff misinterpret the goal to mean that every community must be assessed by a CAV (the more intensive, time-consuming, and comprehensive contact) every five years. FEMA headquarters contributed to this confusion by indicating in its response to a 2002 report by FEMA’s Inspector General that FEMA’s current policy requires that every community be assessed by a CAV every five years (Inspector General 2002)²⁶ Although there may be value in doing so, this expectation is inconsistent with the actual goal as described in FEMA’s guidance (FEMA 1989).

5.1.1 Dual Purpose of CACs and CAVs

Under the NFIP compliance model, CACs and CAVs are tools for both promotion (discussed in Section 4.1.1) and monitoring. For this reason, staff conducting the CAC or CAV may be reluctant to discuss the prospect of sanctions with a community and instead will only provide technical assistance. In its survey of state NFIP coordinators (ASFPM 2004), half the states reported that they view technical assistance, not monitoring, as the primary purpose of CACs and CAVs. One state floodplain coordinator told the study team that, although he conducts many CAVs each year, the CAVs never include discussion of sanctions through the NFIP. He said that enforcing NFIP policies would mean that he could not work as closely with communities, advising them in the same capacity he does now. FEMA emphasizes technical assistance over monitoring and enforcement. This is consistent with FEMA’s implicit model and assumption that all or most do not need enforcement. By combining technical assistance with monitoring and enforcement, FEMA may put too much emphasis on the former as a tool for achieving community compliance and create an environment in which FEMA regional and state staff are unwilling to enforce compliance through sanctions.

²⁶ FEMA said in that response that it would instruct its staff to schedule CAVs in Community Rating System (CRS) communities with the same regularity as other communities and that in doing so CAVs would be conducted in every CRS community within a 3- to 5-year timeframe. This is discussed further in Section 7.3.

On the other hand, monitoring is necessary and the technical assistance aspect of the inevitable community visit can help to “soften” the reality that monitoring is being done simultaneously. Another implication of that state coordinator’s comment and the other states’ responses to the ASFPM survey is that monitoring for enforcement purposes may not be occurring as often as the CAV data suggest. If many states or even regional staff who conduct CAVs are confining themselves to providing education and assistance rather than touring the floodplain and inspecting community records with an eye toward detecting noncompliance, then violations and program deficiencies may be going unnoticed or if noticed, unrecorded for enforcement purposes.

One solution to this dilemma might be establishing a system in which monitoring and technical assistance are separated. Perhaps the state staff become responsible for providing technical assistance while the FEMA staff cover monitoring and enforcement. This would free the technical assistance staff from monitoring and enforcement responsibilities (and vice versa) and over the long run may enable personnel to specialize and thus operate more effectively. However, this approach easily could double the number of community visits that need to be conducted, since it is agreed that community visits are needed both for technical assistance and for monitoring. In a situation in which resources are limited, this might be an inefficient use of staff time and travel funds. Using both state and FEMA staff for both technical assistance and monitoring, and performing them simultaneously, is a tradeoff made by FEMA in the design of the compliance program that is probably unavoidable.

5.1.2 CAVs as Determinants of Compliance or Noncompliance

Although other community contact and other monitoring tools can help detect possible program deficiencies and violations, only by visiting the community (through a CAV) can the existence of compliance problems be confirmed and documented. To be effective in this way, CAVs must verify the presence (or absence) of program deficiencies or violations; provide documentation for future reference; serve as a determination of whether a community is compliant; and set the stage for possible enforcement action.

Detection of Violations and Program Deficiencies

The study team did not attempt to assess how well regional office and state staff perform in detecting violations and program deficiencies; presumably they are all minimally qualified to conduct this task. There was no indication in interviews with regional office, state, or community staff that the conduct of CAVs is inadequate (although, as noted in Section 4.1.1, above, some personality conflicts were described). However, there were several comments from those interviewed that mentioned “old” violations. It was not clear whether these were discovered only recently or whether they had remained unresolved from an earlier CAV. This suggests that there may be some gaps in the CAV procedure (perhaps more time needs to be spent to be sure all of a community’s flood-prone areas are monitored) or in the ability of some of the officials who conduct CAVs (as discussed above, formal training is not required for all state personnel or for all FEMA regional office staff).

Documentation

There are standard procedures for documenting CAVs, set out in FEMA's guidance (FEMA 1989). Documentation consists, at a minimum, of (1) the community visit report (usually called a CAV report) (FEMA Form 81-68), which must be completed after each community visit; and (2) a letter to the community's CEO informing him or her of the findings of the visit (usually called the "follow-up letter"). FEMA's guidance emphasizes repeatedly the importance of thorough and accurate documentation: "Because it is impossible to tell whether an enforcement action will ever be necessary, it is important to document carefully [all] relevant community activities" (FEMA 1989, p. 7-4). The CAV report and any accompanying notes are required to be on file in the regional office within 30 days of the visit (FEMA 1989, p. I-1) and are supposed to be entered into the CIS for future reference. Reports for CAVs that found no compliance problems in a community are filed with the regional office as "closed"; for CAVs that detected compliance problems, the CAV report is completed and filed as usual but the CAV is considered "open." Documentation of ongoing technical assistance and other followup activities is added to the file as needed until all needed action (by FEMA, the states, or the community) is completed and then CAV is "closed." According to information the study team obtained through CIS for the years 1997 to 2002, CAVs are typically closed between 277 and 306 days after they are conducted. Roughly 10 percent are reported closed the same day they are conducted.²⁷

The CAV report has four categories in which "no," "minor," or "serious" program deficiencies are to be noted by the official conducting the CAV: (1) floodplain management regulations, (2) administration and enforcement process and procedures, (3) engineering, and (4) other community land use policies and procedures that are inconsistent with the local floodplain management regulations. Detailed descriptions of any problems are required in the report. Suspected violations of the ordinance must be documented in detail according to a checklist provided in the guidance manual. It includes such details as property address, type of development, photo or sketch, estimated elevation of lowest floor of building and adjacent ground level, location on the FIRM, permit number; date of construction, elevation certificate date, variance information, and other data.

The letter to the CEO describes the findings of the CAV, and FEMA guidance specifies that it be sent within 15 working days after the community visit. Any program deficiencies or violations that were discovered are described in detail in the letter. Actions the community must take to address the compliance problems are listed in the letter, along with a time frame for their completion. Follow-up action that FEMA or the state has agreed to (such as the provision of additional technical assistance, providing on-site training, etc.) is also specified.

The timetable set out in the letter to the CEO as part of the CAV documentation gives concrete deadlines for the community, FEMA, and the state to follow. FEMA's guidance states that any technical assistance that is promised to the community should be provided with 90 days if possible (FEMA 1989, p. 7-1). The deadlines set for community action are to be "reasonable"

²⁷ It should be noted that the date corresponding to a CAV or CAC does not necessarily represent the actual date the action was taken. For instance, two months after a CAV, a regional office staff member may enter data stating that the CAV was closed one week after the CAV. In other words, dates in CIS are those entered by regional and state officials, not necessarily the date when an action was taken.

considering “the complexity of the actions that are required of the community” and in general should be no shorter than 30 days and in many cases 90 day or longer would be appropriate (FEMA 1986 p. 3-13).

Determination of Compliance

When all the follow-up activities to the CAV have been completed, the CAV is “closed.” There is a place at the end of the CAV report form to indicate the date on which the CAV was officially closed by the regional office or state. On that date, the community is considered to be compliant with the NFIP. In most cases, no problems or only minor ones are discovered in a community, so the CAV can be closed within days or weeks. If follow-up action was needed by the community or other entity, the CAV is not closed until all activities are completed. This includes any actions FEMA or the state promised to take as well as all the corrective and remedial action that was required of the community to address its program deficiencies and violations (FEMA 1989, p. 7-1).

It can take months or even a year or more to address numerous or problematic program deficiencies or violations, so CAV reports stay “open” that whole time. The community is not fully compliant, but no sanctions have been applied because it is working on corrective and remedial measures.

If the compliance problems are not remedied within a certain time, then an enforcement action begins (described in Section 6).

CAVs as Precursors to Enforcement

FEMA policy states that a community may be placed on probation on the strength of a CAV done by a state, but that a CAV must have been done by FEMA staff before the community can be suspended (FEMA 1986, p 7-1). This suggests that the FEMA regional office should become involved as soon as possible after a state CAV reveals serious compliance problems, because escalation of the enforcement action may eventually require a FEMA CAV. FEMA’s guidance anticipates this situation by saying, “Agencies conducting CAVs on behalf of FEMA should contact the FEMA regional office at the earliest stage possible if issues or problems may require some type of enforcement action or other follow-up assistance on the part of FEMA . . . Ensuring [that] communities comply with NFIP floodplain management criteria through the conduct of enforcement actions is a FEMA responsibility and can not be delegated to States or other Federal agencies” (FEMA 1989, p. 7-2).

By the same token, FEMA guidance warns that headquarters should be advised as soon as possible after a CAV if headquarters involvement in follow-up actions is anticipated (FEMA 1989, p. 7-3).

5.1.3 Findings on Community Contacts as Monitoring

In chapter four, the study team concluded that FEMA’s goal of contacting every NFIP community once every five years is not necessarily optimal for monitoring or for technical assistance purposes. Some of FEMA’s regional office staff were not aware of the goal, and some misunderstood it. Even if it were widely acknowledged and understood, there do not appear to be

enough resources to achieve it. Even if there were enough resources to meet the goal, all contacts are not documented so there is no way to prove that the goal has been met.

The implications of this insufficiency in monitoring are that first, compliance problems may go undetected, and second, the rate of community compliance cannot be documented fully and accurately. Further, monitoring may not be occurring even as often as calculated by the study team, because at least some states confine their community contact to providing assistance rather than monitoring.

5.2 The Community Information System

FEMA maintains floodplain management information about communities nationwide in a database called the Community Information System (CIS). CIS includes community-specific demographic, engineering, and insurance information; communities' past and present NFIP status and floodplain management activities; status of flood maps and floodplain studies; CRS grade, if appropriate; and other information for all jurisdictions in the United States that have been identified as flood-prone. The CIS also includes information gathered through the mandatory biennial report submitted by communities and reports of CACs and CAVs conducted by regional office or state staff (see Appendix B).

FEMA maintains several other databases of information, such as BureauNet, which contains information on the status of individual properties in the NFIP, including claims and loss statistics, submit-for-rate properties, and policy growth and retention. Unlike BureauNet, however, CIS provides statistics aggregated by community rather than statistics on individual properties (although some of the information contained in CIS does pertain to individual structures, such as Letters of Map Change and CAV notes). CIS is also meant to be a source of information for outside organizations, such as the U.S. Government Accountability Office and FEMA's Inspector General, to develop statistics on the NFIP and participating communities.

Federal, regional, and state floodplain management officials can enter, modify, and view information contained in the CIS database²⁸. They can also request "reports" on selected information through the CIS's Reporting Tool.

FEMA introduced CIS in 1989. Before 1986, NFIP data were maintained on a mainframe computer called the Management Information System (MIS), which was not accessible by the regional offices or states. In 2004, FEMA launched a web-based version of CIS, intended to allow state users access to the database CIS through the internet.

5.2.1 The Role of CIS in Monitoring Community Compliance

An authoritative, official source of community-related information—as the CIS is intended to be—is vital to monitoring compliance with NFIP standards. CIS, or a similar vehicle, needs to archive and make available documentation of a community's history and status in the NFIP. This would allow federal, regional, and state officials to identify, assess, and track communities' floodplain management activities. Such a database should aid planning for

²⁸ Limited access is offered to state floodplain management staff, who may enter, modify, and view specified information on communities in their states, while other information is available for viewing only. National-level users have greater ability to view and modify data.

compliance activities such as training and technical assistance; provide input for making decisions about enforcement actions; and facilitate communication about compliance among headquarters, regional office, and state personnel. Information related directly to community compliance available in CIS includes probation, suspension, withdrawal, and reinstatement; CRS class, effective dates, activity points, and contacts; ordinance adoption and approval; and CAV and CAC dates and findings (see Appendix B).

Ideally, in order to help determine whether another CAV or CAC is warranted, for example, a regional office or state should be able to check in CIS to find out the number of CAVs that a given community has received, what the outcomes were, and how the community has responded to any deficiencies or violations uncovered. Or data from CIS could demonstrate that the community has a history of making progress in addressing floodplain management issues. This type of information could be used in assigning suitable guidance for remedying violations. In addition, all this information can provide a statistical base for analyzing and documenting compliance trends nationwide and over time.²⁹

CIS's Reporting Tool allows users to analyze certain types of data related to compliance, mapping, variances, and community participation. In theory, this reporting capability would be used by FEMA headquarters and regional staff and the states to establish program priorities and improve decision-making. A complete table of the reports contained in CIS can be found in Appendix B. Additional, custom reports may be obtained by contacting FEMA officials directly.

Interviews with federal and regional officials revealed that much communication between headquarters and the region about compliance issues is based on anecdotal information. A lack of consistency in approach, documentation, record-keeping, and evaluation of such issues among FEMA regional offices was a frequently cited problem. In recent years, FEMA has done away with compliance meetings for all regional staff, making it more difficult for regional officials to understand the context of their actions, or coordinate their approaches to shared problems. An effective and reliable statistical tool would enhance the ability of FEMA headquarters to accurately assess compliance activities at the regional level. CIS has the capability to improve consistency among regional offices as well.

To be an effective tool for monitoring community compliance, the CIS must

- be an authoritative source of community information pertaining to NFIP compliance,
- be useable by all relevant parties (FEMA headquarters and regional staff, state staff, and outside entities), and
- be used by NFIP staff and FEMA headquarters and regional offices and by the states.

²⁹ These monitoring functions coordinate well with FEMA's vision of the use of the CIS. According to FEMA guidance, the objectives of CIS are to (1) be the authoritative information source and official record of NFIP data; (2) provide the means of managing the NFIP by providing capability to address day-to-day issues, problems, and program activities, conduct evaluations, track community status, and conduct overall statistical analysis; (3) improve the decision-making process; and (4) offer an effective means to exchange information between the Federal Insurance Administration (FIA) headquarters [now the Mitigation Division] and FEMA regional offices.

Accordingly, the study team's analysis of the CIS covered the extent to which CIS records are complete and accurate, whether relevant parties have access to CIS, whether FEMA provides sufficient guidance on the use of CIS, and whether relevant parties possess database systems as alternatives to CIS.

The CIS as an Authoritative Information Source

To be authoritative, CIS must contain comprehensive and accurate data needed for compliance purposes and also be viewed with confidence by its users.

Incomplete CIS Data on Compliance Activities

Previous estimates of the completeness of CIS records were anecdotal, based on instances in which states had failed to enter information into CIS because of lack of access to the database, insufficient funding and resources to perform the data entry, management miscues, or inadequate guidance. FEMA officials stated that some regional staff members had consistently failed to enter data in the system. They also estimated that only about 60 percent of CAVs and CACs had been recorded in CIS. Interviews with regional officials produced similar answers. Preliminary evidence of CIS's incompleteness can also be found in a survey FEMA conducted in 2002 of regional directors regarding the effectiveness of CAP-SSSE and proposed changes. Regional directors were asked whether the states within their regions were using CIS and entering the results of CAVs, CACs, and ordinance information into the system. Four regions reported that there were some problems with CIS and that use was sporadic, or varied by state.³⁰ Four regions reported that their states were using CIS. One region reported that its states were not. These and other similar responses indicated deficiencies in CIS's completeness.

Because FEMA currently has no systematic way to determine the completeness of CIS records, the study team sought to establish a reliable means of estimating the extent of the compliance-related data present in CIS. Because CAVs and CACs are important tools for both promoting and monitoring community compliance and reports on them are invaluable, an evaluation of the entry of reports on CAVs and CACs into CIS is an efficient way to estimate CIS completeness, even though these data represent only a portion of the information housed in CIS (see Appendix B). The number of CACs and CAVs conducted and closed in a given year can be an important statistic for determining state and regional efforts to measure and remedy local compliance problems. Further, CAC and CAV data require periodic entry and update, and are more frequently used than other information in CIS.

To establish an independent benchmark of actual CAC and CAV activities against which to compare CIS records, the study team contacted state and regional officials and imposed a significant data request upon them and their staffs, which took weeks and often months to complete. As the study team found, evaluating the completeness of CIS records is burdensome under the current system. The implication for FEMA is that officials are unable to readily assess the completeness of records contained in CIS without significant effort.

The analysis was limited to CAVs and CACs conducted between January 1, 1997, and December 31, 2002, to assure that more accurate results were obtained from regional and state

³⁰ One region did not answer this question.

officials, to lessen the effects of staff turnover among NFIP officials, and to focus the analysis on a time period during which the majority of states had access to CIS.

The study team began by collecting records available in CIS for the period in question (current as of September 2003) and then contacted regional offices directly to confirm the available figures and solicit additional records that may not have been entered in CIS. The responses to AIR's requests varied depending on region and state.

CIS's completeness with respect to compliance information was analyzed in two ways. First, the team drew records from CIS of the number of CAVs and CACs conducted between January 1, 1997 and December 31, 2002. State and regional offices were contacted and their records compared to CIS records to determine the percentage of CAVs and CACs entered into CIS. The study team assessed the overall level of incompleteness as well as that of individual states and regions. CAC and CAV records were broken down by whether a state or region had entered them. (The entity that conducts the CAV or CAC is responsible for entering the information in CIS.)

The analysis showed that, nationwide, between 1997 and 2002, 81 percent of CAVs conducted period were entered in CIS, while 81 percent of CACs were entered. Overall, CIS records entered by FEMA's regional offices were slightly less complete than those entered by state officials for the time period. Regional offices entered 77 percent of CAVs they conducted and 78 percent of their CACs. State offices entered 82 percent of CAVs they conducted and 83 percent of CACs. This is a better completion rate than the 60 percent that was estimated by FEMA in interviews and in response to the Inspector General's evaluation.

A relatively small number of states and regions accounted for most of the incompleteness in CIS during the five-year period studied. In Regions III, V, and VIII there were CIS entry rates of 6 percent, 72 percent, and 25 percent, respectively. In Region III, Maryland entered fewer than two percent of the CAVs and CACs conducted and closed by the state office between 1997 and 2002. In Region V, the regional office entered 20 percent of the CAVs it conducted and closed in Indiana, but none of the CAVs it conducted and closed in Minnesota. There were deficiencies in CIS entry in Region VIII as well.

Data were deficient for several states.³¹ Fewer than 10 percent of the CAVs and CACs conducted in Wisconsin, Maryland, Montana, Utah, and North Dakota, were entered into CIS. Confirming the findings for regional offices, three of these six states are in Region VIII. Regions III, V, and VIII had consistently low entry of CAVs and CACs, both by the regional offices and by the state floodplain management office. Table 3 shows the level of entry of data into CIS by those states that have incomplete records.

Incomplete CIS records also mean that some monitoring activities go unrecorded. For example, between 1997 and 2002, regional officials reported that Iowa conducted 81 CACs in participating communities but CIS only records 34. During interviews, officials in Virginia's Department of Conservation and Recreation pointed out that CAV records for their state were incomplete. The officials stated that CIS shows that Virginia had conducted three CAVs

³¹ Data for a state represent CAVs or CACs conducted and entered by either the state or the regional office. In other words, some CAVs conducted in Kentucky were entered (or not entered) by the state floodplain management office in Kentucky, while others were entered (or not entered) by FEMA Region IV.

TABLE 3: States with Incomplete entry of CACs and CAVs

State	Portion of CAC and CAV Activities entered in CIS, 1997 to 2002
1 Wisconsin	0%
2 Maryland	1%
3 Montana	2%
3 Utah	2%
5 North Dakota	3%
6 Ohio	26%
7 Pennsylvania	28%
8 Delaware	29%
9 Wyoming	37%
10 West Virginia	50%
11 Colorado	54%
12 South Dakota	61%
12 Michigan	61%
12 Iowa	61%
15 Minnesota	66%
16 Indiana	91%

Source: BureauNet, AIR analysis, FEMA region and state records.

since 1997. In reality, the state has conducted 34 since 2001 alone. Although the study team went to considerable lengths to contact regions and states to obtain more accurate figures than are available in CIS, organizations independent of FEMA, such as the U.S. Government Accountability Office, may not have the time, resources, or knowledge to confirm the CIS statistics in this way. This means that the actual compliance activities of states and communities can be significantly misrepresented.

Interviews with federal, regional, and state officials confirmed these patterns and explain, in part, the deficiencies found in data entry. FEMA officials in Region III stated that “inputting data into CIS is low on the region’s priority list.” Some regional and state officials expressed the view that data-entry is too time-consuming, costly, and unproductive, given available resources. In a survey conducted by FEMA in 2002, nearly 25 percent of the regional officials who answered a question about data-collection efforts stated that their states or region did not have the time or resources to enter compliance-related data into CIS.

Based on AIR’s interviews with officials and analysis, possible reasons for the failure of the states and regional offices to complete their CIS data entry include

- Lack of resources and/or personnel,
- Negative perceptions among regional or state staff about the usefulness of CIS and about data entry,
- No perceived consequence for failure to enter information into CIS, and
- Lack of access to CIS (before 2004, when the system was transferred to the web).

From information gathered by ASFPM for its survey of state floodplain management programs, the study team concluded that past CAP-SSSE agreements (which determine most state activities with regard to the NFIP) typically placed a low priority on entering information into CIS: “the activities least often conducted using CAP funds are “maintaining and updating CIS,” according to ASFPM’s survey.

Repeated guidance from FEMA to all regions and states emphasizing the importance of entering data in CIS has not succeeded in eliminating incompleteness. Targeting the small number of states with significantly incomplete records may be a more effective way to address the problem than simply reissuing general guidance.

Inaccuracy of CIS Data on Compliance Activities

The study team did not conduct a statistical analysis of the accuracy of information already entered in CIS, because it was not able to obtain reliable information against which to check CIS data. FEMA headquarters could not provide accurate CAV and CAC data and recommended that the study team contact regions directly. Requests from regional offices for the total number of CAVs and CACs conducted in the time period took between one and six months to assemble and required repeated followup by the study team. Comprehensive analysis of the content of CAV and CAC record—if a method could be found to conduct it—could yield valuable information about CIS usage and data entry.

However, it can be said that since CIS records are demonstrably incomplete, any aggregated data drawn from the system necessarily will be inaccurate. The same is true of any trends that may be drawn from a review of CIS data. The incompleteness of the records in CIS and the accuracy of the system are inseparable.

An example of the effect of problems with making inferences based on inadequate data collection systems can be found in FEMA’s official response to a 2002 report by the Office of the Inspector General, *Community Rating System: Effectiveness and Other Issues*. The purpose of the Inspector General’s review was to determine the effectiveness of the CRS as a tool to improve local floodplain management and recommend improvements. The Inspector General analyzed the number of CRS communities that had received a CAV and recommended that FEMA emphasize in its CAP-SSSE guidance the importance of completing CAVs for all CRS communities. FEMA replied that because the number used by the Inspector General in its analysis was derived from CIS, and a large number of FEMA regions and states have not entered all of their CAVs into CIS, the agency “did not accept the Inspector General’s estimate and suspected that more communities had received CAVs than was shown.”

There is anecdotal evidence of other ways in which inaccuracies have been introduced to CIS. For example, one regional official stated that he had started closing all files open before 2000 regardless of current status in an effort to clean up records. Because of his action, an unknown number of CACs and CAVs were never properly resolved and/or recorded. One branch chief stated that insurance data are the only accurate information in CIS but are not useful to the regional office for compliance purposes.

FEMA headquarters officials told the study team they expected the web-based version of CIS (introduced in 2004, at the end of the data-gathering phase of this study) would encourage uniformity across regions by requiring regional staff to enter all CAC and CAV and compliance

data. However, it is unclear whether the web-based version would address the quarter of respondents who feel they lack the time or resources to record compliance data in CIS.

Lack of Confidence in CIS

Based on interviews with federal, regional, and state officials, the study team found that numerous officials perceive CIS as unreliable and inaccurate, regardless of the actual level of accuracy of the data housed in the system. Attitudes toward the usefulness of CIS were almost universally negative. Federal, regional, and state officials have been unwilling to use CIS as a reliable statistical, informational, or planning source. This perception is potentially more damaging to the success of the CIS as a monitoring tool than any actual deficiencies in the database.

One of the stated functions of CIS is to allow groups such as the U.S. Government Accountability Office and Congress to develop statistics on flood prone communities, including compliance information. However, after the review by the Inspector General of the effectiveness of the CRS described above, FEMA rejected the figures drawn by the Inspector General from CIS, saying that “for various reasons, we [FEMA] know that not all CAVs have been entered into CIS by the FEMA regions and states.” FEMA could not offer a more reliable figure or even an estimate of CIS’s inaccuracy, but the agency’s misgivings about its usefulness were clear. Without the data supposedly cataloged in CIS, a constructive appraisal of compliance deficiencies is prevented. This hampered AIR’s own evaluation.

CIS as a Useable Tool

To be a useable monitoring tool, the CIS must be accessible to all appropriate users, must house and present information in a useful format, and allow it to be retrieved in ways that are convenient for users.

Access to CIS

All parties involved in community compliance—states and regions—must have ready access to CIS if it is to be an effective monitoring tool. Universal access to the CIS has been a problem since its inception, largely because of technological obstacles: the database is large and must be used by numerous people with differing computing platforms, and constant advances in the various computer systems induced a continual “catch-up” cycle for the CIS. Several state offices had not been able to access the system because of firewalls or other security measures that were attached to their computer systems. In recent years, FEMA has focused attention on making CIS accessible and in 2004 introduced a web-based version that reportedly has greatly minimized and possibly eliminated access problems. As of 2006, there were nearly 1,000 registered CIS users, and training had been conducted on using the web-based version.³²

Even though access problems appear to have been resolved, the past inaccessibility of CIS necessarily has resulted in an inaccurate historical record, that unless remedied, will continue to yield information that is unsuitable as a basis for some types of compliance monitoring and evaluation..

³² The majority of the study team’s interviews and analysis were done in 2003 and early 2004, before the web-based CIS was operational. This updated information was obtained from FEMA headquarters.

CIS as a Workable Tool

Because CIS can only access information related to a single community at a time, the CIS “Reporting Tool” is the only means for retrieving data in a form that enables statewide, regional, or national comparisons. As the CIS’s main evaluative and planning method, the reporting tool has several deficiencies. It is limited to 51 different “reports” with fixed data fields, and it can present data on only a small portion of the large number of fields available in CIS (see Appendix B). For most reports, the user is allowed to modify the time period and scope of the data (national, regional, state, or community).

Errors or formatting problems can make data obtained through the reporting tool unreliable or unusable. Also, the reporting tool generates reports in .pdf format, readable with Adobe Acrobat software, which prevents the user from manipulating data or running operations as basic as summing items in a column. This format also makes it difficult to import or transfer information into or from a database format (such as Microsoft Excel or Microsoft Access). Although the .pdf format ensures that reports generated by CIS are not modified incorrectly, it precludes planning or statistical evaluation functions for larger, more complex reports. Flexible, user-generated queries would greatly increase the capabilities of CIS and serve regional and state needs.

Customized reports are available by directly contacting FEMA headquarters officials charged with maintaining CIS. However, these requests for data can take weeks or months to be completed, depending on their complexity and the availability of FEMA staff.

Extent to which CIS is Used by Relevant Parties

To be an effective monitoring tool, CIS must actually be used by the people who need its information—FEMA headquarters and regional office staff and state personnel, as well as the occasional external agency or group. AIR’s investigation found that CIS is not universally used by those people, and uncovered some reasons why that may be so.

Several FEMA officials stated that CIS is seen primarily as a *data-entry* tool, maintained to satisfy FEMA’s regional or headquarters offices, of little use in day-to-day operations. According to one branch chief, CIS is an example of a headquarters-designated responsibility that hinders, rather than helps, regional offices fulfill their responsibilities.

One program specialist in Region V told the study team that she uses CIS to review, approve, and close CACs and CAVs conducted by Michigan state officials. But another person in the same region stated, “neither the states nor the regions use CIS.”

It was clear from interviews that CIS is not used routinely to help make decisions about compliance. Instead, compliance problems and issues are brought to the attention of regional officials through other means, often anecdotal and descriptive, rather than quantitative (property-owner complaints, local officials’ requests for technical assistance, or biennial reports). Regional and state officials emphasized that they utilize frequent personal contact with community officials to keep apprised of communities’ NFIP status, compliance issues and problems, and community program activities.

Guidance on CIS

One possible explanation for the lack of use of CIS is that the system's role and capabilities are not understood. Two main avenues through which FEMA can provide guidance on compliance-related CIS topics and record-keeping are the guidance for CAVs and CACs and the instructions for implementation of activities under the CAP-SSSE. The study team found that CIS guidance through both of these avenues has been lacking.

CIS was launched in 1989, the same year in which the primary compliance document, *Guidance for Conducting Community Assistance Contacts and Community Assistance Visits*, was issued. The CAV guide makes no mention of record-keeping using CIS or its role in the NFIP. The guide refers to the Floodplain Management System, one of several precursors to CIS that is no longer in use. Because the guide has not been re-issued since its initial debut, it still does not contain information on the CIS.

FEMA also issues annual guidance that directs states and regional offices on the use and implementation of funds provided under CAP-SSSE. CAP-SSSE funds a variety of state activities, including CIS data entry. The CAP-SSSE agreements made between the region and the state may also include directives to input information into CIS. For example, Louisiana's CAP-SSSE agreement for Fiscal Year 2003 contains as one of its 13 tasks "update and maintain CIS program," noting that the updated information "will be shared with FEMA Region VI personnel on a regular basis." Of states surveyed by the ASFPM, 98 percent and 92 percent indicated that CAVs and CACs, respectively, were accomplished under the CAP-SSSE agreement, indicating ample opportunity for FEMA to mandate, guide, and fund state entry of those key compliance activities into CIS.

Instead, the CAP-SSSE guidance issued by FEMA headquarters has placed varying degrees of importance on CIS use and data-entry. Although guidance for earlier years did not mention entry of floodplain management activities into CIS, guidance for Fiscal Years 2003 and 2004 state that entry of data into CIS is expected. Guidance for Fiscal Years 2004 and 2005 used stronger language: "Regional Offices are to *ensure* that all information is entered into CIS. . . . Regions *should require states* to update and enter information . . ." [emphasis added].

However, none of the annual CAP-SSSE guidance documents from 1999 to 2005 stipulates consequences for failure to complete CIS data entry. Presumably regional offices track the state's entry of CIS data if it is a specified task under the state's CAP-SSSE agreement, and would have the same recourse for requiring that the task be completed as it would for any other task. However, the study team did not uncover any instances in which this option for requiring entry of CIS data had been pursued.

The effect of deficiencies in guidance can be seen in the priority regions and states place on CIS data-entry. According to the ASFPM, 29 states, or 58 percent of those that responded, stated that maintaining and updating CIS was covered under the CAP-SSSE Agreement. However, the survey also found that "maintaining and updating CIS" was among the activities least often conducted using CAP-SSSE funds. Apparently, states and regions recognize that CIS is available and encouraged by FEMA headquarters, but place little importance on entering data into the system.

Alternative Database Systems

One illustration of the consequences of the problems with CIS is that states have developed alternative data collection and database systems of their own. The extent to which they depend on those systems probably lessens their use of CIS. According to the 2003 ASFPM survey, over 75 percent of the states reported that they maintain some sort of floodplain management-oriented website and/or state database. These systems may have features and objectives similar to those of CIS and, to the extent that they come to be relied upon instead of CIS, the usefulness of CIS will be further undermined.

Based on the survey responses, state database systems are not standardized and their content varies considerably. Nearly all of the information reported by state floodplain management officials as contained in their databases, however, overlaps with that maintained in CIS. For example, Kansas officials reported that their own database contains community name, address, floodplain manager, CEO, CRS status, repetitive loss structures, last community visit, ordinance status, flooding source, and type of map, all of which are covered in CIS. Still, no state appears to possess a database as comprehensive as CIS. Also, some data is maintained in informal systems, accessible only to regional or state officials. For instance, one regional official stated that most state compliance data are kept in handwritten notes.

Although state databases may fulfill compliance planning needs within that state, they do not facilitate the exchange of information between states, regional offices, and FEMA headquarters. Duplicative data systems may mean expending unnecessary time and resources replicating data entry work. Although it is unknown whether identical information is being entered in both databases by the states, the prospect of multiple, possibly contradictory, sources of compliance information is a bleak one. Nor is it clear to what extent state databases exist in lieu of CIS. If states and others are habitually using state databases instead of CIS, that would help explain both why CIS is not used more and also the incompleteness found in CIS records. An official at ASFPM stated that “over half of the states are keeping their own comprehensive databases,” which are not compatible with CIS. Also, an official stated in 2003 that Wisconsin has its own data collection efforts and databases that are not compatible with CIS and that neither the state nor the region uses CIS.

5.2.3 Effectiveness of CIS as a Monitoring Tool

CIS has the potential to be a significant aid to monitoring community compliance with the NFIP, but it is not being used effectively. The deficiencies in CIS are not due primarily to problems with accessibility, which is being addressed through the new web-based system. Rather, time and financial constraints, lack of guidance, lack of consequences, a cumbersome reporting software program, and negative perceptions prevent the CIS from being a complete and accurate source of information about the compliance activities that take place. This also prevents FEMA officials and the states from using data that already exist to assist in the monitoring functions of the NFIP, and undermines the credibility of the CIS as a source of information for compliance use.

The study team concluded that CIS is not yet the authoritative source of statistical information on floodplain management that is needed for effective nationwide monitoring of community compliance with the NFIP.

- The CIS records are only about 85 percent complete, with some states and regions having a very small proportion of their floodplain management data in the system.
- Of the records that are stored in the system, it is impossible to gauge their accuracy because of the absence of an independent, readily available source of alternative information. Further, the very lack of comprehensiveness automatically renders inaccurate any aggregated information that may be pulled from CIS.
- CIS is not viewed with confidence by its users. Perceptions of CIS's inaccuracy undermine its authority as a source of monitoring information

CIS has the potential for being a useable tool, but has some significant drawbacks:

- The CIS reporting tool, the only means by which information can be pulled from the system other than a display of a single community's record, is limited, inflexible, and not susceptible to customized inquiries.
- Customized reports can be obtained from CIS only through FEMA headquarters staff, and can take several weeks to produce.
- Reports generated from CIS are available only in .pdf format, which cannot be manipulated. They would be more useful if they could be downloaded into a spreadsheet or database format.

CIS is not actually used as a monitoring tool by most relevant parties:

- Officials seldom rely on the monitoring capabilities of CIS to help them assess, evaluate, or make decisions about current compliance issues. Instead, they rely on anecdotal and descriptive information such as that obtained through personal contacts.
- CIS's usefulness for monitoring compliance is undermined by the widespread belief among personnel at FEMA headquarters, regional offices, and the states that it is unreliable—inaccurate and untested in terms of generating useful reports. This impression is potentially more damaging to the long-term usefulness of CIS than actual inaccuracies because of entrenched individual and institutional attitudes.
- The guidance issued by FEMA with regard to the purpose and potential uses of CIS, its role in compliance, the importance of data entry, and other issues has been inconsistent and inadequate.
- Many states have developed and are using their own database systems.

The study team concluded that, without some changes, the CIS's value as a monitoring tool is not likely to improve.

- There is no systematic or statistical means of evaluating the deficiencies in CIS or attempting to remedy them. FEMA reports that this is largely a result of having minimal staff resources at headquarters to work on improvements to the CIS.
- CIS's incompleteness is largely attributable to selected regions and states, but repeated instructions to regional offices and states to finish the data entry have not resulted in that task's being completed.
- States and regions consider the entry of data into CIS to be a low priority, based in part on their own perception of the system's uselessness (see above).

The CIS is vital to successful monitoring of community compliance with the NFIP. FEMA's stated objectives for the CIS are completely supportive of this function. The measure of the CIS's success as a monitoring tool is that states and regions should be able to accurately assess past and current compliance and related floodplain management activities through the CIS. The CIS also could play a critical role in planning for future activities and as a statistical source for FEMA participants, as well as outside evaluators. However, these goals can be achieved only with a database system that is authoritative and useable, a status that had not been fully reached at the time the data for this evaluation were collected. As noted above, FEMA has taken steps recently to remedy key shortcomings in the CIS. The study team has several recommendations to further improve the CIS as a monitoring tool, listed in Section 5.7. For FEMA to improve CIS, and indeed to implement these recommendations, it will have to overcome negative attitudes on the part of regional office and state officials that CIS records are unreliable.

5.3 The Submit-for-Rate Procedure

For the majority of types of structures built after a community's FIRM becomes effective, flood insurance rates are specified by insurance agents who use tables published in the NFIP *Flood Insurance Manual* to determine the appropriate rates. However, the *Manual* does not provide rates for structures built more than 1 foot below the BFE, those that are located in an unnumbered V Zone, and others with special characteristics. In those cases, the agent must submit the flood insurance application to company headquarters for individualized rating. This process is called a "submit-for-rate."³³ Some of these submit-for-rates applications are for compliant buildings that are difficult to rate and therefore need to be handled individually by an underwriter, but many indicate buildings that may be in violation of local floodplain management regulations. The study team examined submit-for-rates to determine the extent to which they can identify noncompliance and thereby serve as a monitoring tool.

5.3.1 The Submit-for-Rate Process

The study team examined the lowest floor elevations of all residential structures on file with FEMA that were submitted for rating in June 2003. Although the specific reason a given

³³ FEMA told the study team that many coastal communities will have some compliant structures rated through the submit-for-rate process because of the complicated nature of coastal construction. However, the study team found that only a small percentage of all submit-for-rates come from coastal zones and less than one percent from unnumbered V zones.

structure was submitted for rate is not known, the study team found that 88 percent of residential structures submitted for rate were built more than one foot below BFE (Table 4), indicating possible noncompliance with the local ordinance.

Submit-for-rates are considered by FEMA to be a “red flag” that alerts floodplain management staff to possible noncompliance (FEMA 1989). Because of this, FEMA keeps data on all structures submitted for rate and passes information on those structures to its regional offices for their attention and also instructs its Bureau and Statistical Agent (BSA) to forward submit-for-rate applications to the appropriate regional offices in monthly packets. The packet identifies the structure (by address, community, FIRM and panel number, zone, post-FIRM vs. pre-FIRM, etc.), its height relative to the BFE, whether the structure has enclosures below BFE, the type of walls used for the enclosure, whether the structure has vents, whether the structure is floodproofed, and whether a variance was granted.

TABLE 4: Height of Residential Structures Submitted for Rate Relative to BFE, June 2003

Height Relative to BFE	Number of Residential Structures Submitted for Rate	Percentage of Total Residential Structures Submitted for Rate
Built 1 foot below BFE or higher	33	13
1.1 to 1.9 feet below BFE	49	19
2 to 2.9 feet below BFE	43	16
3 to 3.9 feet below BFE	21	8
4 to 4.9 feet below BFE	21	8
5 or more feet below BFE	96	37

SOURCE: FEMA’s Bureau and Statistical Agent (BSA)

Although these data cannot be used to determine with certainty whether the structure is compliant, they can give FEMA and the states a reason to suspect noncompliance and follow up with the community. The data can indicate program deficiencies, such as a community that is granting a large number of variances. Because of the information described above and the fact that is routed to the regional offices, submit-for-rate data should be useful to regional office and state staff in targeting possible noncompliance.

5.3.2 Use of Submit-for-Rate Applications as Monitoring

The majority of the FEMA regional office staff interviewed by the study team said that they take some action to address submit-for-rates when they receive referrals from BSA. About half of FEMA program specialists told the study team that they contact the community to investigate the submit-for-rate when they receive a referral. The other half of FEMA program specialists told the study team that they do not address submit-for-rates with the communities, but rather pass the referrals on to the states to investigate. Several FEMA program specialists told the study team that a large number of submit-for-rates in any community would prompt the region or state to conduct a CAV in the community. States confirm this, as 15 states report that they use the data on submit-for-rate reports to help them set priorities for community monitoring visits (ASFPF 2004).

TABLE 5: Average Number of Submit-for-Rates, 1998-2002

Submit-for-Rates by Region	
Region	Average per Year
I	122
I	350
III	288
IV	2,488
V	260
VI	749
VII	71
VIII	53
IX	85
X	71
Top 10 States by Average Number of Submit-for-Rates	
State	Average per Year
FL	1,483
TX	530
NC	318
SC	262
NJ	241
LA	186
MS	138
GA	136
VA	116
NY	94
SOURCE: FEMA BSA	

However, several FEMA regional office and state floodplain management staff told the study team that they find the format of the submit-for-rate referrals they receive from BSA to be confusing. They report that it takes a long time to figure out why the structure was submitted for rate. This can deter them from following up on the information for compliance purposes. This is especially true in the regions and states that receive a large number of submit-for-rates. As table 5 shows, Region IV averages more than 200 submit-for-rates each month. Florida alone accounts for one third of all submit-for-rates in an average year. Other regions average between four and 60 submit-for-rates each month. One state with a large number of submit-for-rates said that it takes staff a long time to go through the submit-for-rate applications passed on to them in boxes from the region because the boxes are “normally not accompanied by a cover letter or any description of the contents.” The state floodplain manager said that the state does not have the staff to devote to reviewing the documents or using them for compliance work.

Many staff members at the regional offices told the study team that they perceive error by insurance agents to be a common reason structures are submitted for rate. It is the perception of one FEMA program specialist that 70 percent of the submit-for-rates he investigates are “incorrect.” A common statement was that regional office staff found structures submitted for rate had been issued a Letter of Map Revision that removed them from the floodplain. Such a structure would not be required to be elevated and thus should not have been submitted for rate.

Some regional office and state floodplain management staff told the study team they did not understand what to do with submit-for-rates. When asked how submit-for-rates affected compliance, the state floodplain manager and another staff member for a state with high numbers of submit for rates from 1998 to 2002 responded only that they were unfamiliar with the submit-for-rate process. The state floodplain manager for another state with a high number of submit-

for-rates told the study team that the region thought “privacy issues” prevented them from sharing submit-for-rate applications with him.

The perceptions that submit-for-rate data are confusing or incorrect, and ignorance of the ways submit-for-rate data could be used discourage regional office and state staff from using the data as a tool for identifying possible noncompliance. It is clear from interviews that many regional office and state staff want to use the information, but it was not possible to quantify the extent to which it is actually used.

5.4 Letters of Map Revision based on Fill

Raising the ground elevation of a portion of a floodplain property with earthen fill and then constructing the building on top of that fill is often the best strategy for protecting that building and its residents. Sometimes when earthen fill has been used to elevate the ground level of a parcel, the result is that the floodplain is essentially changed because an area of land previously lying below the mapped 100-year flood level now lies above it. In those instances, a request can be made by a property-owner, developer, or participating community that the community’s FIRM be officially modified by the issuance of a Letter of Map Revision Based on Fill (LOMR-F). This revision reflects a change in flood risk to that property (resulting from its having been raised above the floodplain level). The result is that property with the LOMR-F is officially removed from the SFHA and is exempted from the local ordinance (and thus the NFIP standards) and from mandatory purchase of flood insurance. A LOMR-F does not reflect an inaccuracy in the initial FIRM, but rather is a voluntary procedure requiring the review and/or approval of community officials, independent mapping contractors, and FEMA.

Under the NFIP standards, LOMR-Fs may not be granted in floodways, V-Zones, coastal areas, or SFHAs subject to alluvial fan flooding. The NFIP requirements prohibit the placement of fill and other obstructions in the floodway unless it can be shown that there will be no increase in flood stage, but there are no limitations on placement of fill outside of the floodway. It has long been debated whether allowing fill at all is desirable and also whether removing such filled properties from the floodplain via LOMR-Fs is good floodplain management. The placement of fill can cause localized drainage problems and increased flood levels and also have negative effects on the floodplain itself, by removing natural storage, altering natural floodplain processes such as channel migration, and degrading riparian habitat. On the other hand, fill can be a safer method of protecting buildings from flood damage since floodwaters do not come in contact with or enter a building elevated on fill.

A number of officials interviewed stated that LOMR-Fs do not support the objectives of the NFIP. A mapping contractor noted that this sentiment has been in existence since the mid-1970s. Many NFIP officials and state floodplain managers believe that mapped elevations should not be changed based on fill and that such incremental revisions are disruptive to floodplain management efforts. One FEMA official stated “a system that requires buildings to be elevated in the floodplain and removes buildings elevated by fill from the floodplain is fundamentally at odds with itself.” Officials have speculated that the use of fill might have residual impacts on surrounding properties, the floodplain environment, and encroach on the floodway as well.

A central dynamic in the debate is whether fill should be treated as a means of elevation, and protection from a flood hazard, or whether it should be evaluated solely as a change in the

map. Although there is considerable disagreement among experts regarding the consequences of fill, FEMA's issuance of LOMR-Fs seems to favor the placement of fill over other means of elevation. Unfortunately, this argument runs, issuance of a LOMR-F then removes the requirements of the mandatory purchase requirement, one of the main inducements for flood insurance purchase and building elevation.

However, the study team found a lack of formal, nationwide studies certifying the safety of properties that receive LOMR-Fs. A few case studies were found that peripherally addressed the issue of fill. Interviews with federal, regional, state, and community officials showed the study team that relatively little is known about the consequences of granting LOMR-Fs on compliance or the use of fill as a means of elevation. This issue is examined more thoroughly in another study in the NFIP Evaluation (Rosenbaum 2006). Conversations with FEMA officials and experts revealed that the lack of data on LOMRs resulted from the gradual process within NFIP implementation of separating LOMR-Fs from other forms of map revisions and shifting from the treatment of fill as an elevation technique to treating it as a map change.

5.4.1 LOMR-Fs and Community Compliance

LOMR-Fs are used as monitoring tools to target potential compliance problems in two main ways: through the LOMR-F application process, and through routine NFIP monitoring.

The LOMR-F Process as Monitoring

During the course of the LOMR-F application process, a handful of cases are identified as potential violations to NFIP regulations. In Fiscal Year 2002 15,057 properties applied for LOMR-Fs, a slight decrease from Fiscal Year 2001, but in keeping with the average number of requests processed per year. From this number, 12,653 properties were removed from the SFHA by LOMR-Fs and 600 were denied.³⁴

Denials may be indicators of a deficiency in the community's floodplain management program. Because a community must certify that a property is reasonably safe from flooding before FEMA issues a LOMR-F, a denial means that FEMA disagrees with a community's determination. Nationwide, for Fiscal Year 2002, 4 percent of all determinations were denied, consistent with the two preceding years. Over the past three fiscal years, denials accounted for 3 percent of determinations nationwide, ranging from 0.98 percent in Region 9 to 10 percent in Region 3.

Between Fiscal Years 2001 through 2003, 105 properties were targeted as potential violations. The most common issues with these properties are the improper placement of fill—such as in the floodway or a V zone—or lowest floor elevations that are well below the BFE. The distinction between denied requests for LOMR-Fs and the list of potential violations is that denials result from reasons other than violations of the NFIP. FEMA suspends judgment on the applications that contain potential violations and forwards the case to the FEMA regional office and the community to be resolved. The requestor can reapply for a LOMR-F.

³⁴ It should be noted that because LOMR-F applications are often for multiple properties, the figures displayed do not reflect the number of cases processed, but rather the number of properties affected by FEMA's determination.

LOMR-Fs as Indicators in Community Assistance Visits

The number of LOMR-F applications each year that obtain the approval of community officials, but are denied by FEMA, can be an indication of compliance problems. The communities, states, or regions that have the most denials may have fill-related violations or they may have program deficiencies (lack of technical expertise to perform the necessary analysis to properly certify the safety of the property with fill). For this reason, FEMA's guidance states that (1) issuance of a LOMR-F should be recorded in the CIS and be made available for review by the FEMA official who conducts the CAV; (2) the number of LOMR-Fs in a community is one an indicator of floodplain development activity and could be a reason to target a community for a CAV; (3) officials conducting a CAV should assess the processes by which LOMR-Fs and other forms of development are approved and to check the community's documentation that floodplain development (including fill) does not result in increased flood elevations more than allowed by the NFIP standards.

Summary

FEMA's current procedure for identifying potential violations through the LOMR-F application process is useful but limited as a compliance tool. Although it does serve to identify potential floodway and lowest-floor violations, it cannot identify all potential violations involving fill. The study team was not able to determine the extent to which LOMR-F records are entered into CIS as intended, or how frequently they are used by regional or state staff.

5.5 Community Rating System Procedures

Another method through which monitoring of community compliance can be done is through the routine procedures of the Community Rating System (CRS). The CRS is a voluntary program within the NFIP that encourages communities to perform floodplain management activities that exceed the NFIP's minimum requirements. Communities that do so are rewarded with discounted flood insurance premiums for their residents. About 1,000 communities participate in the CRS, representing about 66% of the NFIP's policy base. One prerequisite for joining the CRS is that the community be in full compliance with the NFIP's minimum requirements. The CRS is managed jointly by FEMA and by Insurance Services Office, Inc. (ISO).

Communities participating in the CRS are subject to routine NFIP monitoring, but the CRS application and participation procedures provide an additional level of monitoring. There are three additional means by which CRS communities are monitored and their compliance with the NFIP thus could be verified: (1) upon initial application to the CRS; (2) when an upgrade of CRS status is requested; and (3) during periodic visits by ISO/CRS personnel. Through these additional contacts between CRS communities and NFIP-related personnel, indicators of potential compliance problems can be spotted. If information about CRS communities is regularly shared among FEMA, the states, and ISO/CRS personnel, there should be ample opportunity to avert compliance problems in CRS communities. The monitoring steps are discussed individually and in more detail in Section 6.3.

5.6 Other (Insurance Claims, Complaints, Requests for Assistance)

There are a variety of other means by which FEMA and the states monitor local floodplain management activity in order to identify potential compliance problems. Both state and regional offices routinely receive letters and telephone calls questioning the propriety of observed floodplain development activity or otherwise notifying them of potential violations. Through the process of providing technical assistance to local officials, developers, and others who request it, floodplain management staff members sometimes become aware of potential compliance problems. Flood insurance claims that are atypical are another trigger for further investigation.

As noted in the discussion on technical assistance above, data are not available to determine how many communities receive some sort of contact through these other means, or what followup action is taken, if any, because regional and state staff usually do not record such interactions. The study team did see copies of letters to communities and other documents such as staff notes, but they are not routinely catalogued. Thus the extent to which such work contributes to overall monitoring cannot be quantified. Although its quantitative value to monitoring is unknown and the technique is a largely passive one—simply waiting for requests or complaints to be received and then reacting to them—these signs of potential compliance problems are part of the information constantly being sifted by regional and state floodplain managers whose professional judgment is often the most reliable indicator of trouble.

5.7 Findings and Recommendations for Monitoring Compliance

All the tools available to FEMA and the states for monitoring community compliance with the NFIP are necessary and useful, both alone and in combination. Two of them are the most significant, however. First, CAVs are absolutely essential to the success of the overall compliance program. Second, a fully functional CIS is critical for effective monitoring and for demonstrating the extent of compliance nationwide. FEMA has done well with the former while the condition of the latter can use further improvement.

CAVs (and to a lesser extent, CACs) produce the closely targeted and in-depth information that is essential to a determination that a community is compliant or noncompliant with the NFIP. That and the documentation that is made of the visit and its aftermath are the foundations of potential enforcement actions. However, because they can only be conducted relatively infrequently, CAVs cannot suffice as the sole monitoring technique. Just under 1,800 community contacts and visits are conducted in an average year, roughly 10% of the participating communities, using all available resources at regional and state levels. Even assuming that no community is visited or contacted twice (an untrue assumption), in any given five-year period only half the communities participating in the NFIP could have an encounter with a regional office or state official could qualify as a monitoring contact.

The CIS contains information about every community participating in the NFIP—no other monitoring tool compares with this potential. A good portion of that information is useful in targeting potential violations and determining which communities may need further monitoring. Just as important, the CAV and CAC reports and notes that are supposed to be stored in CIS are the main mechanism for maintaining historical perspectives on compliance, tracking past problems, and determining trends and levels of compliance.

At the time of this investigation, the CIS was populated with about 85% of the CAV and CAC records that are required to be housed there, and the status of the other data was unknown. Nor did it appear that most FEMA regional office or states staff were using CIS effectively for monitoring. As explained above, this is due to the perceived (and possibly actual) inaccuracy of the data and the cumbersome nature of its reporting feature. Thus, to a large extent, the potential of this powerful monitoring (and evaluation) tool has been unrealized. Although FEMA has addressed one of the main deficiencies in the CIS (inability of all users to access it), the agency also needs to remedy two other shortcomings (the backlog of unentered information and the clumsiness of the reporting software) and also re-establish the CIS's credibility among regional office and state staff as a depository of accurate information on compliance and other NFIP activities.

The most effective way to use these two strong tools (CAVs and the CIS) would be to draw upon the CIS's broad coverage of statistical information to spot and track indicators of potential compliance difficulty and then to schedule contact or visits with the communities involved to investigate the situation. FEMA's guidance for CIS and compliance both indicate that the tools should be coordinated in this way, but the study team found that in practice this correlation has not been taking place. Regional office staff have tended to disregard the CIS and rely more on indicators they develop on their own (information from states, etc.) to determine which communities to contact or visit. States rely on FEMA and the CAP negotiations and their own indicators to set their priorities for community contacts or visits. Both of these techniques are reasonable approaches, but the effective use of CIS and its data would sharpen these efforts and provide the additional advantage of statistical documentation of existing and past situations.

The study team found that the other monitoring vehicles (CRS procedures, the submit-for-rate process, LOMR-F applications, and other sources of information such as complaints or requests for assistance), are primarily of use as incidental indicators of potential noncompliance. As such, each piece of information obtained through these avenues must receive individual follow-up if the levels of NFIP compliance are to benefit from it. Typically the follow-up takes the form either of investigation by regional or state staff as input of the information into the pool of factors that will be considered when the next round of community visits is scheduled. However, data on these indicators are not all assembled or archived or shared systematically, so they are not as useful as they could be.

5.7.1 Recommendations

More resources (funding and staff) should be found to increase the number of CAVs (and CACs) conducted by the states and by FEMA regional staff. The CAVs and CACs are not done frequently enough to ensure community compliance.

FEMA should clarify its goal for the frequency of contacting every community and specify its applicability to CRS communities. The 1989 guidance is clear that community contact may be quite short and simple—all that is needed for the majority of communities—but subsequent word from FEMA headquarters and regional and state interpretations have indicated otherwise. Reiteration or modification of the original guidance is needed. If FEMA wants to ensure that certain types of communities (e.g., CRS communities) are contacted specifically via CAV (rather than a CAC), it should issue an explicit clarification to this effect.

FEMA should bring the CIS closer to realizing its potential as a monitoring tool by:

- Eliminating the backlog of incomplete records within CIS. To be an authoritative and statistically valid source of information, CIS needs data that approaches being 100% complete. If targeted efforts to get complete data entry from the regional offices and states (as recommended below) do not prove sufficient, FEMA should contract with an outside organization to enter data from past CAVs and CACs into CIS to complete the database of past records. A dedicated organization could enter data more efficiently than FEMA regional staff, who have other responsibilities.
- Focusing resources and attention on the regions and states with the most deficient CIS records. The majority of discrepancies in CAV and CAC records (and presumably the remainder of CIS records) is due to a few regions and states. Rather than simply re-issuing guidance to the nation as a whole, requiring the entry of information into CIS, FEMA should specifically target these regions and states and address the reasons for their incomplete data entry. Because of the likelihood that there are varied reasons for unfinished CIS data entry, a single solution is unlikely to remedy inadequacies in all regions and states.
- Updating and clarifying guidance on entering information in CIS. The guidance for conducting CAVs and CACs, which was issued in 1989, needs to be updated to include the entry of CACs and CAVs into CIS during follow-up or documentation. Adding this info is critical for two reasons. Not only would an update provide an opportunity for FEMA to distribute instructions and describe its expectations for CIS data entry, but also it would allow FEMA to update the guidance on a number of other issues that have changed since the document's publication, such as the rules regarding LOMR-Fs.
- Making entry of CAV report data into the CIS a prescribed and funded task for states under the CAP-SSSE. FEMA should direct the regional offices to ensure that entry of information into CIS is done by states as a funded activity under the CAP-SSSE. This would link funding for CACs and CAVs directly to recording the results of those contacts in CIS. CIS entry then could be monitored by regional officials in charge of managing the CAP. This is consistent with FEMA's goal of using CAP-SSSE as a means of moving states toward a performance-based management model.
- Adding to the list of data routinely entered into the CIS. Information on turnover of community staff could be obtained by adding an item on the biennial report form or through a separate regular canvassing effort, perhaps conducted by the states. These data would help set priorities for community contacts and visits. FEMA also should add a component to the CIS that tracks submit-for-rates in communities. This would enhance monitoring by incorporating into the computerized recordkeeping system another indicator of potential noncompliance and make it easier for regions and states to access and share the information.
- Improving the flexibility of the CIS reporting tool. A user-generated query system would improve the flexibility of CIS and make full use of the information it contains.

The study team recommends that FEMA investigate the potential for implementing a reporting interface that offers customized reports in a more accessible format.

- Rehabilitating the image and reputation of the CIS among users and potential users. FEMA regional office and state floodplain management staff should be encouraged to make better use of the CIS for monitoring, enter records conscientiously, and begin to trust the data they can access through CIS.
- Periodically checking the accuracy and completeness of CIS records. CIS's completeness should be checked regularly and compared to FEMA's goals. Regardless of the method used, regular assessments of state and regional data entry efforts are essential to maintaining and improving the usefulness of the system as a compliance monitoring tool and for its other functions. The study team recommends that FEMA complete further studies to gage the accuracy of existing information and determine sources of inaccuracy.

Clarify the submit-for-rate reporting form. FEMA should add a place at the top of the submit-for-rate application in which the insurance agent can write a general statement of the reason he or she is submitting the structure for rate. Regional office staff and their partners in the states can refer to that statement to quickly determine which submit-for-rates warrant further investigation.

Provide updated guidance on how submit-for-rate data should be used for monitoring. Confusion among the regional office and state staff about how to use submit-for-rate data is hampering the use of the information as a screening tool for noncompliance.

6. ENFORCEMENT OF COMMUNITY COMPLIANCE

An effective community floodplain management program is continually identifying potential and actual violations of its NFIP-based ordinance and taking steps to avert them or enforce compliance on its own, for example, through its building inspection procedures. These sorts of compliance issues need never come to the attention of FEMA or the states.

Even in situations where FEMA or state personnel have knowledge of a deficiency or violation and communicate it to the community, NFIP or state enforcement action is not necessarily required. Often a program deficiency or a violation is the result of misunderstanding, and the community is able to correct the deficiency or remedy the violation in short order after becoming aware of it. Many of the instances in which informal technical assistance is provided to the community by regional office or state personnel (perhaps via telephone) as discussed in Section 4.1.1 no doubt fall into this category. State and regional office staff told the study team that they spend considerable time answering questions from communities, some of which are questions about specific compliance problems that the communities have or see developing. However, as noted in Section 5.2, these are not systematically documented so it is impossible to know how much potential and actual noncompliance is being addressed in this way. Sometimes a letter or email is sent to the community as confirmation of the guidance provided, and a copy is filed, but such records are not universally kept. In most of these cases presumably the community addresses the problem and enforcement steps on the part of FEMA or the state are unnecessary.

This mode of operations is in keeping with the NFIP compliance model's emphasis on voluntary and cooperative compliance and enforcement and is in accord with guidance issued by FEMA, that an objective of its community compliance program is to emphasize "resolving problems through technical assistance rather than through an enforcement action" (FEMA 1986).

For purposes of this discussion, then, "enforcement" is considered to begin when FEMA or the state notifies a community in writing that one or more substantive program deficiencies and/or violations have been identified and requests that the community correct and/or remedy them. The deficiencies and violations are described in writing, ways to address them are suggested, and deadlines are given for completion of the needed actions. This notification is almost always made in a "follow-up letter" to the Chief Executive Officer of the community after a visit to the community, because of the difficulty of precisely detecting specific compliance problems off-site. The community visit could have been prompted by information about potential violations that reached FEMA or the state through one of the indirect monitoring tools described in the previous section (submit-for-rates, CRS verification visit, community contact, etc.) or they may have been identified through a regularly scheduled CAV. The procedure for and content of such follow-up letters are described in FEMA guidance (FEMA 1989, p. 6-5).

In most cases, receiving written notification of the compliance problems and what must be done to address them is sufficient to prompt the community officials to take action to regain full compliance with the NFIP. FEMA and/or state staff provide technical assistance and work with the community as needed and also conduct follow up monitoring to confirm that the necessary actions have been taken. The community, state, and FEMA have a range of tools for addressing compliance problems (figure 7).

FIGURE 7: Tools for Enforcing Community Compliance

Correcting program deficiencies—FEMA or state mandates, community corrects
Remediating violations—FEMA or state mandates, community remedies
Rescission of permit so proposed structure or development is not carried out
Modification of structure or development
Legal action against property owner or other responsible party—brought by state or locality
Section 1316 denial of insurance
Subrogation actions by FEMA against community and/or individual
Probation
Suspension

In other cases, however, the community is not responsive to a simple notification of compliance problems. If the community is unable or unwilling to remedy violations in an allotted amount of time, if program deficiencies are too pervasive or serious, or if the community does not or will not correct them, FEMA can impose sanctions. The two strongest community-wide sanctions are first, probation and, if the community still remains noncompliant, suspension from the NFIP. In addition, there are sanctions that can be applied to individual structures in order to induce or compel compliance or at least shift the noncompliant structure's flood risk away from taxpayers or other policyholders and back to the property owner.

From the point at which the community's CEO is notified in the follow-up letter that certain compliance issues must be addressed to the time that such issues are fully resolved (or are not resolved, resulting in sanctions), many different scenarios can develop. The resolution of compliance problems is a complex process that can involve action by and consultation among many players at the local, state, and federal levels and in the private sector. It may require the use of a combination of techniques and take several months, a year, or even more to resolve all problems (see box on LaFourche Parish).

This chapter describes the steps used by FEMA and the states in the enforcement process and examines the effectiveness of each of the tools to achieve compliance with the NFIP. That discussion is followed by an analysis of the strength of the enforcement component of the NFIP compliance program and recommendations for improvement.

LaFourche Parish, Louisiana, addresses Noncompliance

This example of a fairly simply compliance problem shows how LaFourche Parish's noncompliance was addressed over time, in a series of steps, and through a combination of techniques.

According to LaFourche Parish, in 2003 FEMA reviewed almost 175 variances issued by the community between the 1990s to 2003 and found that a quarter of them had been granted inappropriately. Not only were inappropriate variances granted by the community Board of Appeals, but the permit issuing office also granted "waivers" along with many permits, recognized by the community but not by FEMA, which excused structures from meeting NFIP building requirements without grant of formal variances.

FEMA gave the community six months to remedy the violations or risk sanctioning, including removal from the CRS and possibly probation.

The community did not meet the deadline and was consequently retrograded to a CRS class 10 (nonparticipation in the CRS).

After that, the Parish managed to convince many of the variance recipients to bring their structures into compliance at their own expense. To achieve this, the Parish publicized the community-wide loss of the discount on flood insurance that the CRS had provided; threatened to sue the noncompliant variance recipients; and warned of the residents of FEMA's threat to place the community on probation, which would result in a surcharge on policies. Extensive local media coverage of the situation brought all these considerations to light.

As of June 2004, a representative of the FEMA regional office said that the Parish had remedied all but six of the noncompliant variances. The community and FEMA then agreed to pursue the possibility of declaring the remaining noncompliant structures ineligible for flood insurance under Section 1316.

6.1 Determining Noncompliance

As noted in Section 5.1 on monitoring, community visits (CAVs) conducted by either the states or FEMA personnel form the basis for a determination of a community's compliance or noncompliance. The community is considered noncompliant if it has one or more deficiencies in its floodplain management program, and/or there is one or more structures or other development within its jurisdiction that are in violation of the local floodplain management ordinance. However, rather than making a formal, public declaration that a community is noncompliant as soon as deficiencies or violations are documented, FEMA's practice is to provide the community with opportunities to achieve compliance on its own. These opportunities come in the form of first, additional technical assistance and consultation with state and/or regional staff and other federal agencies as needed, and second, time to work out and implement the best combination of solutions.

Therefore, to prepare for possible eventual enforcement action but still allow for the likely resolution of the problems by the community, FEMA and the states use a procedure that documents the noncompliance and the steps that are taken to address it but still maintains the community's good standing with the NFIP. Under this procedure, the program deficiencies or violations identified during a CAV are recorded in the CAV report in the state or FEMA files and the CAV's status is left "open," meaning that compliance problems exist in the community. Follow-up consultation, technical assistance, and progress reports continue and are all added to the CAV report documentation. When the compliance problems are all resolved, the CAV is considered "closed" in the FEMA and state records, indicating that the community is fully compliant with the NFIP. There is a space on the CAV report form (and entered into the CIS) in which the responsible regional office staff member indicates that the CAV is officially closed.

This period during which the CAV is open because compliance problems in the community are being worked on is an essential part of the compliance process under the model used by FEMA for the NFIP. It allows a period during which FEMA, the state, and the community can work cooperatively to resolve the compliance problems after the community has been formally notified of the nature of the problems and of what must be done to address them. Although interim deadlines are usually imposed in the follow-up letter for achieving interim steps towards the goal of full compliance, FEMA's regional staff and the states have the flexibility of extending these deadlines as needed, if the community continues to make progress.

One result of this procedure is that communities learn how to address their compliance problems and become more proficient at interpreting and implementing the flood damage reduction provisions of their ordinances. Another result, however, is that some communities remain essentially noncompliant for a long period of time. Federal, regional, and state officials interviewed by the study team agreed that serious building violations and program deficiencies are allowed to persist in a large number of communities.

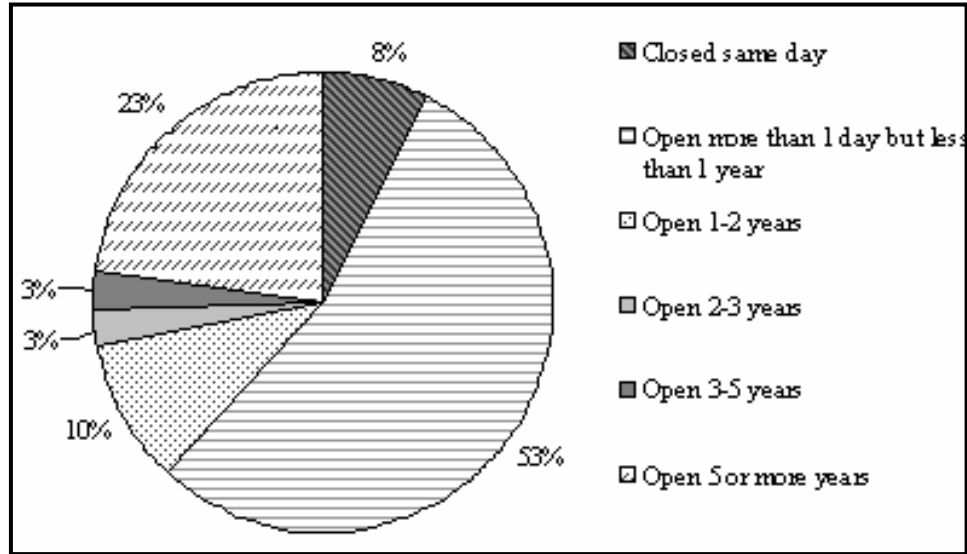
6.1.1 CAVs Remaining Open

As noted, a CAV (or a CAC) remains "open" until all program deficiencies have been corrected and violations remedied and any assistance promised to the community has been provided. At that point FEMA or the state officially "closes" the CAV. If no violations are discovered and the community does not need technical assistance, the CAC or CAV may be closed on the same day it is initiated. Therefore, the length of time a CAV remains open should indicate how long communities are noncompliant and how long it takes to resolve program deficiencies or violations. FEMA (1989) states that remedial actions should be pursued "on a timely basis." Nevertheless it acknowledges that some program deficiencies and violations may take a year or more to remedy. The study team analyzed the CIS data on CACs and CAVs from January 1997 through December 2002. Figure 8 shows the average length of time CAVs remained open during that period.

The study team found that 61 percent of CAVs were closed within one year of being initiated, meaning either that no compliance problems were found or that they were addressed within one year. Within 2 years, 71 percent of the CAVs were closed. The average length of time a CAV was open was 277 days. Almost a quarter of CAVs were open for five or more years and 21 percent of CAVs conducted from 1997 to 2002 remained open as of May 2004.³⁵ Assuming two years is sufficient to address most compliance problems if a good-faith effort is being made, these figures suggest that roughly one-quarter to one-third of communities with known compliance problems are not responsive to additional technical assistance and consultation from FEMA and/or the states. It must be assumed that during these years, violations and program deficiencies are persisting and that, consequently, buildings and thus the Flood Insurance Fund remained at risk.

³⁵ The average length of time a CAC was open was 118 days. As of May 2004, 5 percent of CACs conducted from 1997 to 2002 remained open. CACs are not included in the above analysis because most do not involve a community visit, which would be necessary before enforcement action. CACs that did reveal a potential compliance problem presumably led to CAVs.

FIGURE 8: Length of Time CAV Remained Open, CAVs initiated 1997 to 2002



Source: CIS, May 2004

In theory, CAVs are closed only when compliance problems have been resolved. In practice, however, the study team identified multiple instances in which senior regional officials in FEMA closed CAVs even though violations had not been addressed (for instance, in an effort to clear the backlog of data not entered in the CIS, as discussed in Section 5.2. Sometimes CAVs were closed by the regional office managers in the face of opposition from the staff who had conducted the CAV. This detracts from the reliability of the length of time a CAV is open as an indicator of progress in obtaining compliance. By the same token, it was not possible to determine whether CAVs remained open after the problems were addressed simply because of insufficient recordkeeping or confusion due to staff turnover—that is, the CAV “closure” was not recorded in CIS even though the community had resolved its compliance problems.

6.1 Correcting Program Deficiencies

The first type of compliance problem that may be found in a community is a *program deficiency*. A program deficiency is “a defect in a community’s floodplain management regulations or administrative procedures that impairs effective implementation of floodplain management regulations” or building regulations (FEMA 1986). The NFIP compliance program differentiates between minor program deficiencies and substantive ones (Table 6).

Although *minor* program deficiencies must be corrected, they are the sort of problems that do not impede a community’s ability to enforce, or are not critical to effective implementation of, its floodplain regulations. Examples include permit or variance records that are not easily accessible, or administrative procedures or practices that are easily corrected and do not result in multiple violations or increase exposure to flood losses.

TABLE 6: Some Typical Program Deficiencies and Ordinance Violations

<p style="text-align: center;">Program Deficiencies</p> <p style="text-align: center;">Program deficiencies may be minor or substantive. Examples listed below are substantive. (All program deficiencies must be corrected.)</p>	<p style="text-align: center;">Ordinance Violations</p> <p style="text-align: center;">Violations may be minor or substantive. Examples listed below are substantive. (All violations must be remedied to maximum extent possible.)</p>
<ul style="list-style-type: none"> • Local floodplain management ordinance and/or regulations inconsistent with NFIP regulations 	<ul style="list-style-type: none"> • Building not elevated to proper level
<ul style="list-style-type: none"> • Local administration and enforcement process and procedures inadequate to prevent violations 	<ul style="list-style-type: none"> • Improper use of enclosed area below lowest floor
<ul style="list-style-type: none"> • Changes in the community boundary that affect the flood hazard area 	<ul style="list-style-type: none"> • Manufactured homes not anchored
<ul style="list-style-type: none"> • Failure to use best available data as basis for setting local elevation and floodproofing requirements 	<ul style="list-style-type: none"> • Building components (HVAC, utilities) not elevated to proper level
<ul style="list-style-type: none"> • Variance procedures inconsistent with NFIP criteria 	<ul style="list-style-type: none"> • Encroachment in floodway
<ul style="list-style-type: none"> • Failure to operate and maintain flood protection projects credited by FEMA as providing 100-year protection (such as levees) 	<ul style="list-style-type: none"> • Building in V Zone not anchored • Building in V Zone placed seaward of mean high tide

Substantive (sometimes called “serious”) program deficiencies are those that have resulted or could result in increased potential flood damage or flood stages, such as failure to require permits for proposed construction or other development within flood-prone areas, ordinances that are not compliant with the NFIP’s floodplain management criteria or that do not contain adequate enforcement provisions, or variance procedures that are not consistent with NFIP variance criteria.

Any deficiencies in the community’s program that are discovered must be *corrected*. Little or no leeway is allowed the community in meeting this standard, because it is fully within the community’s control to take the steps needed to correct these procedural and administrative shortcomings. A flawed ordinance can (and must) be amended. A relaxed local permitting procedure must be revamped. Enforcement procedures for the ordinance must be formalized if they have been ineffective in preventing violations. These are program deficiencies and render the community noncompliant even if there is no building activity taking place and no buildings are in violation. The community is expected to take corrective steps once the problems have been identified.

Some of the examples of ways to correct program deficiencies given in the *Community Compliance Program Guidance* include

- amend ordinances to close loopholes;
- amend ordinances to add penalty provisions;
- revise permit, certification, or inspection forms to make them more usable; and

- locate or produce missing elevation or floodproofing certificates.

There are many other ways to correct deficiencies, depending on the nature of the problem.

6.2 Remediating Violations

The second type of compliance problem that a community may have is a *violation* of its floodplain management ordinance. A violation is “the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations” (FEMA 1986). A typical violation is a building whose lowest floor has been built below the BFE or whatever elevation is required by the community’s ordinance, or a structure in a V Zone that is not properly anchored to a pile or column foundation. FEMA guidance differentiates between minor violations and substantive ones (table 6).

A *minor* violation is one that does not normally result in increased flood risk in the community, although it still must be remedied. A *substantive* violation is one that has resulted in or could result in increased potential flood damage or flood stages. Substantive (sometimes called “serious”) violations include, but are not limited to, obstructions in floodways or stream channels that increase flood stages, post-FIRM structures built with their lowest floor below the BFE, or structures located seaward of mean high tide.

Because of the limitless variety of circumstances, ordinance violations can be more complicated to handle than program deficiencies. The violations are most often buildings that are improperly built or elevated, but there can be ordinance violations that involve bridges or other structures, improper use of fill, damage to dunes, etc. FEMA’s compliance guidance states that violations must be *remedied to the maximum extent possible*.

There are two main reasons that violations are subject to a different standard than program deficiencies (which, as noted above, must be fully *corrected*). First, in some cases there are limits to the community’s authority and ability to eliminate the violation completely. For example, the community’s ordinances may lack provisions for penalties to be imposed against errant property owners. In this case, the ordinance may be amended (correcting the program deficiency), but it could not be made to apply retroactively to violations that had already occurred. Second, violations can vary in severity. Some violations result in buildings that are at greatly increased risk of flood damage (being constructed several feet below the BFE, for example). Other buildings, even though they are in violation of the local ordinance, may not be subject to much additional damage. A common example of this kind of violation is a building whose lowest floor has been built to the proper elevation but its utilities (furnace, air conditioning system, etc.) have been placed below the flood elevation. To further complicate the situation, in some cases it may be almost impossible (or prohibitively expensive) to bring a building into full compliance.

One major goal of the NFIP standards is to lessen or eliminate the flood damage that buildings will suffer. Thus FEMA does not always require buildings in violation to be brought back into full compliance before the community itself can be termed compliant. Instead, if there is no legal or practical way to make a building fully compliant, a community may be allowed to bring the building into partial compliance or, if this is not possible, find a way to reduce the

impacts of the fact that it is non compliant, or to reduce federal liabilities with regard to the structure, and/or to protect the structure or other affected development from flood damage (FEMA 1986).

Communities have several options available to them to remedy violations to the maximum extent possible. Remedies depend in large part on the type of violation and its cause. Some of the examples of ways to remedy violations to bring the structure into full compliance, as given in the *Community Compliance Program Guidance* include:

- Demonstrate that the structure is not in violation by providing missing elevation, V Zone, or floodproofing certificates;
- Rescind permits for structures not yet built or in the early stages of construction;
- Tear down or modify the noncompliant structure or
- Remove offending fill in the floodway; and
- Implement a master drainage plan or flood control work to protect noncompliant structures (FEMA 1986, p. 3-6).

It is important to note that it is not always possible for a community to fully eliminate the harm (or potential harm) done by a violation. FEMA's guidance therefore provides for remedies that can at least lessen the impact of the violation, decrease the likelihood that a similar one will occur in the future, or provide for ways to shift the costs of the harm done by the violation. If implemented to the maximum extent possible, these remedies can return the community to compliant status even though there may be nothing more that can be done about the noncompliant building or development itself. Ways to remedy violations that do not result in a fully compliant structure but do lessen or shift risk or serve as deterrents include

- Seek civil or criminal penalties as provided for in the local ordinance;
- Initiate licensing actions against architects, engineers, builders, or developers responsible for the violations;
- Issue declarations that the structures are noncompliant for purposes of denial of insurance under Section 1316 of the National Flood Insurance Act; and
- Submit evidence that the structure cannot be cited (due to legal constraints in state or local legislation, for example) (FEMA 1986, p. 3-7).

The community is expected to pursue one or a combination of available options to remedy building violations to the maximum extent possible. Often FEMA or the state will specify what they consider to be appropriate remedies, or such decisions may be made in consultation with the community officials. It is not unusual for communities to welcome the "strong hand" of a state or federal office when they are dealing with developers or others who do not wish to abide by the local requirements.

It should be noted that, in the NFIP model of compliance, violations and program deficiencies (described in the previous section) are interrelated. Presumably a community with a compliant program has measures in place to detect potential violations and prevent them from occurring, but mistakes and oversights can occur. By the same token, a community with structures or development in violation cannot be considered compliant, even if its administrative procedures seem exemplary and there are explanations for how the violations occurred.

6.2.1 Maximum Extent Possible

NFIP regulations state that communities are required to remedy violations to the “maximum extent possible.” The compliance program guidance defines the standard as “the most effective level of flood loss reduction given practical and legal constraints.”

When asked to define maximum extent possible, officials from FEMA headquarters provided a similar definition: addressing violations to the degree possible given the legal, economic, and practical constraints. An official from FEMA headquarters provided the following example: a house built on a crawlspace whose lowest floor is found to be six inches below BFE, with no flood vents or ventilation openings. He said that, rather than requiring the property-owner to elevate the entire house at tremendous cost, the community may seek more practicable solutions that reduce the flood risk, such as creating openings to allow water to enter during flood stages and thus equalize the water pressure on the foundation, and/or applying minor floodproofing measures.

The staff interviewed by the study team at the regional, state, and local levels offered differing views of what specific remedies would qualify for “maximum extent possible.” This

What is the Maximum Extent Possible?

An example of confusion over the definition of “maximum extent possible” and “full extent of legal authority” can be seen in the case of Lafourche Parish, Louisiana.

In September 2003, Lafourche Parish was found to have granted 44 improper variances. The community was warned by FEMA that its continued participation in the NFIP was contingent on correction of its variance procedures (a program deficiency) and remedying existing violations (most of which were the absence of flood vents in lower areas of buildings). By December, the Parish had corrected all but 17 of the original violations, many of which required the addition of vents on storage sheds.

Community officials examined the options of prosecuting property-owners of noncompliant properties or making Section 1316 declarations in order to avoid having to pursue legal action against the owners of the structures. FEMA representatives indicated that Section 1316 should only be enacted after all other methods of bringing properties into compliance had been attempted. It was unclear to community officials whether this meant first prosecuting property owners. In a letter to the parish president, a FEMA official stated that “where appropriate,” legal action is expected as part of comprehensive efforts to bring the parish in line with NFIP regulations. This did little to clarify whether legal action was obligatory.

An article in the *Daily Comet*, the Lafourche Parish newspaper stated, “Semantics leaves room for speculation, as parish officials are left to determine exactly what FEMA officials mean by” the maximum extent possible.

Charges were eventually filed against some property-owners, although statements by the district attorney indicated that the filing of charges may not have been a serious indication of an intention to prosecute property owners, but rather the fulfillment of a minimum requirement imposed by FEMA. The parish’s experience is indicative of the confusion over both remedying violations to the maximum extent possible and the need for court action against property owners.

demonstrates that communities, states, and regions have varying concepts of the threshold for addressing violations and require remedies to meet different standards. In the words of a FEMA official, “all communities enforce differently and have varying tolerance levels for noncompliance.” For example, one community may require a home built three feet below BFE to be demolished, while another community may decide that requiring the elevation of just the utilities is a practicable strategy.

Although flexibility in applying such standards is a hallmark of the NFIP compliance program, it is not clear to what extent this inconsistency is detrimental to compliance overall. This is the type of difficulty that would be minimized by more systematic and readily accessible documentation of monitoring activity or by facilitating the sharing of best practices among regional office and state personnel in a regular forum such as that discontinued by FEMA some years ago, as discussed in Section 4.2.2. A staff person faced with a compliance problem without an obvious solution could access the CIS to see how a similar situation was handled in the past or in another region. Or, if regular meetings had been held, he or she might already have an idea of how to handle it, or would know someone in another regional office or state who had dealt with a similar situation.

6.2.2 Full Extent of Legal Authority

FEMA headquarters officials stated that a community is remedying violations to the maximum extent possible when it exercises the full extent of its legal authority to remedy them. The legal remedies available to communities vary according to the provisions of their local ordinances and sometimes state law. Typically there will be a provision authorizing the community to impose fines, issue injunctions, demand specific performance, etc. There is disagreement, however, on whether violators must be prosecuted by the community in order to regain compliance with the NFIP. A FEMA headquarters’ official said that a community did not have to take violators to court before declaring a Section 1316 denial of insurance coverage, which is discussed below. But two communities said they were told the opposite: that they were required to utilize the court system before declaring a property ineligible for flood insurance under Section 1316.

6.2.3 Options for Remediating Violations

States, communities, and property owners (and sometimes FEMA) have a number of options available to remedy individual building or development violations to the maximum extent possible to bring the structure back into compliance and reduce its flood risk. Most of these options are pursued by the community independently in the course of its normal inspection and enforcement procedures, and some are pursued after consultation with state and/or FEMA staff after a community has been notified that it is not in compliance with the NFIP. Thus these measures are some of the steps communities must take to avoid sanctions (probation and suspension) from FEMA. Addressing structural violations individually reduces flood risk, eliminates negative insurance effects, and does not penalize compliant property-owners in the community.

The following sections discuss enforcement actions that can be taken against structures in violation after the failure of other, simpler options (such as simply notifying the property owner

that the structure or violation must be corrected). Often the options listed below are the last avenues available to a community before FEMA must impose community-wide sanctions.

Legal Action against Owner of Noncompliant Structure

One of the ways in which communities (or states) can remedy violations is by taking legal action against the owner of the noncompliant structure, according to the recourse available in the local ordinance. It is the implicit threat of such action that causes most property owners to fix whatever is wrong with the structure when simply notified by the local government that it is in violation. In a community that has been found to be noncompliant, FEMA or the state may mandate legal action as part of the community's remedies if requesting the property owners to comply is not effective. Some examples follow.

- The community could take corrective action or do work on the noncompliant structure itself, and bill the owner for the work. If the owner refuses to pay, a lien may be able to be placed against the property.
- The community could record a notice of violation on the property deed or title in the recorder's office. The notice remains until the violation is remedied and informs current and future owners of the violation and the need to correct it, and projects the higher flood insurance premiums associated with non-compliant construction.
- The community could bring civil or criminal charges against the property owner.

FEMA officials interviewed by the study team disagreed about the effectiveness of prosecuting violations in court. Such proceedings are costly and time-consuming, with no guarantee of the outcome. One FEMA program specialist said FEMA wanted to avoid a situation in which a community goes to court and loses, for fear of setting a precedent that the community did not have an enforceable basis for its regulations. In contrast, an ASFPM official stated that legal action by the community would be helpful because, even if the community lost the case, it would establish a precedent that the local floodplain manager would enforce regulations through the courts if necessary.

Denial of Flood Insurance under Section 1316

In some cases, even after all options for remedial action have been explored, a community cannot cause a structure in violation to be brought into compliance with the local ordinance. This could occur when a property owner refuses to have the necessary work done even after the community has applied all the penalties available under its ordinances or when the building is constructed or situated in such a way that the violation is uncorrectable. In such instances, a community or state can remedy the situation to some extent by declaring the structure ineligible for flood insurance under Section 1316 of the National Flood Insurance Act. Although the structure will remain at risk, the risk then will be borne by the property owner rather than by the other policyholders or taxpayers.

Regulations implementing Section 1316 were first issued in 1986. A declaration under Section 1316 denies flood insurance for a property in violation of state or local floodplain management regulations. Section 1316 can only be implemented in instances when an appropriate

authority in the state or community submits a declaration to FEMA specifically stating that the structure is a violation. When FEMA determines that the violation is valid, flood insurance becomes unavailable. No new policy can be written to cover the building, nor can an existing policy be renewed. A structure ineligible for flood insurance also would be ineligible to a mortgage from a federally regulated lender. In addition, grants, loans, or guarantees made by federal agencies may not be obtained for acquisition or construction related to the structure. If there were a flood, no federal disaster assistance would be available to rebuild or repair that structure. Flood insurance coverage can be regained when a declaration of violation has been rescinded.

The prospect of having a Section 1316 declaration made on a property provides both an economic incentive for the property owner to correct the violation (an uninsurable structure may be less valuable in the real estate market), and a method by which communities can take action against “uncorrectable” violations. It also is meant to deter future violations. Section 1316 is not a preferred method of remedying a violation, because it is better that the structure be modified to be made compliant and less prone to risk. Instead, Section 1316 was intended primarily as a backup for local enforcement actions (i.e., if a community could not force compliance through the enforcement mechanisms in its regulations, it could use Section 1316 as additional leverage) and not merely as a mechanism to remove bad risks from the policy base (FEMA 1986, p. 4-2).

Data obtained by the study team showed that 755 Section 1316 declarations were made between December 1968 and January 2004. As of January 2004, there were 603 properties on the register of active declarations (some declarations were rescinded after the property owner took the needed action to eliminate the violation). Section 1316 declarations are highly localized by community and state. Declarations have been made in only 106 participating communities (0.5 percent of all participating communities) in 32 states. Table 7 lists the top 10 communities with historical and active 1316 declarations.

TABLE 7: Historic and Active Section 1316 Declarations, Top Ten Communities

Community	Active 1316 Declarations	Percentage of Active 1316 Declarations	All 1316 Declarations	Percentage of All 1316 Declarations
Galveston County, TX	131	21.7	151	20.0
Montgomery County, TX	120	19.9	122	16.2
Harris County, TX	68	11.3	102	13.5
Cameron Parish, LA	30	5.0	32	4.2
City of Tybee Island, GA	22	3.6	32	4.2
City of Valley Park, MO	18	3.0	19	2.5
Yavapai County, AZ	15	2.5	23	3.0
Platte County, MO	15	2.5	17	2.3
Buchanan County, MO	14	2.3	15	2.0
City of Tarpon Springs, FL	10	1.7	51	6.8
	443		564	
SOURCE: CIS and FEMA				

Ten communities accounted for 73 percent of all active Section 1316 declarations and 75 percent of all declarations. Even for those communities, Section 1316 declarations were a rare occurrence. Seventy percent of communities that have issued 1316 declarations have only done so once or twice. Appendix C lists all communities with active Section 1316 declarations.

The study team considered that the infrequent use of Section 1316 declarations as a remedial measure may indicate one or more of the following conditions: high levels of compliance (i.e., Section 1316 declarations are not needed very often), lack of knowledge about the Section 1316 option, or reluctance on the part of local officials to preclude a property owner from obtaining insurance. It also may indicate that other, more preferred means of remedying violations are successful in most instances. The study team's work on this question was inconclusive.

It is unclear whether most participating communities know that Section 1316 is an option for remedying a violation, given its infrequent use. The *NFIP Community Compliance Guidance* gives only general guidance, stating that a Section 1316 declaration should be made when the violation cannot be remedied by modifying the structure. The community should pursue the most effective level of flood loss reduction attainable given practical and legal constraints before making a Section 1316 declaration. Section 1316 is listed as an example of a means of remedying violations, but there is little additional direction about whether it should only be used as a last resort, or after attempts have been made to bring the property-owner to court.

The study team did encounter some apparent contradiction in the use of Section- 1316 in relation to the "full extent of legal authority" standard, which implies that communities must exhaust the legal options available to them under their ordinances before making a Section 1316 declaration. In some cases, this would mean utilizing the court system to prosecute violators. A FEMA headquarters official said that a community did not have to take violators to court before declaring a Section 1316 denial of insurance and that the Section 1316 declaration was meant to provide an additional recourse for a building official when his or her request to bring legal action against noncompliant structures is denied by the community's attorney. The study team identified several communities that had declared Section 1316 on properties without taking the owners to court. But two of the communities interviewed said they were told the opposite: that they were required to utilize the court system before declaring a property ineligible for flood insurance under Section 1316.

Without an in-depth investigation of the various circumstances surrounding all the Section 1316 declarations, which falls outside the scope of this study, it is not possible to determine whether the remedy is being applied appropriately. It may well be that the flexibility necessary within the NFIP compliance program results in legal action being required from some communities before a Section 1316 declaration is determined to be the "maximum extent possible" of remediation for a given structure while in other communities the pursuit of further legal recourse is not necessary before the Section 1316 option is followed.

Subrogation Actions against Community and/or Property Owner

A subrogation action is a legal procedure that FEMA can follow to recover the costs of insurance claims paid for flood damage that occurred as a result of acts or omissions of a community or an individual property owner. Subrogation actions are not pursued frequently, and

were not explored in this study. They are a very staff-intensive option and require the dedication of considerable resources. However, the authority and ability of the NFIP to protect its financial outlays in this way is another tool in the enforcement process and can act as a deterrent to noncompliance.

6.3 Flexibility in Correcting Program Deficiencies and Remediating Violations

Participating communities vary widely by population, level of development, type of flood hazard, and number of policyholders. Some communities fund their floodplain management programs generously and are staffed with world-class expertise. They administer superior programs that in many ways exceed the NFIP's minimum requirements. In contrast, other participating communities, often strapped for resources and unconcerned about floods (until they happen), find themselves dependent on inexperienced and part-time officials who know little about floodplain management.

This diversity in expertise has obvious implications for basic levels of compliance nationwide: some communities find compliance with NFIP standards simple and automatic while to others compliance is a confusing struggle. This diversity also complicates FEMA's and the states' response to communities when noncompliance is discovered. Regardless of what the programs' regulations may require, reality occasionally requires FEMA and the states to temper their expectations about compliance. Although all program deficiencies must be corrected, FEMA guidance allows its staff to work with communities to remedy violations to the "maximum extent possible," which is sometimes to a lesser degree than originally required by the NFIP. This may involve, for example, allowing a noncompliant structure built below BFE to elevate only its utilities to BFE (rather than the whole building) or it may involve dry floodproofing a non-elevated residential structure (which normally is not allowed), among other options. Further, FEMA guidance states that communities are to use their discretion in addressing compliance problems, and that they should be given "a reasonable degree of latitude in determining how to correct a program deficiency or remedy a violation" (FEMA 1986, p.3-4).

The variety of circumstances and community capabilities also dictates that FEMA allows its staff leeway to use its judgment to determine when a community has done all that it can to correct deficiencies and remedy existing violations, at which point FEMA considers the community to have regained compliance. Likewise, FEMA's staff is expected to use its judgment to determine when a community is no longer responsive to FEMA's efforts to help it remedy violations or correct program deficiencies, at which point the staff should recommend that sanction procedures be initiated.

The Community Compliance Program Guidance describes "mitigating" and "aggravating" factors that regional office (and state) staff should take into account both when determining what corrective actions and remedial measures must be taken by a noncompliant community and also when deciding whether the community has addressed the problems sufficiently or movement toward sanctions is warranted. Some examples of mitigating circumstances listed in the guidance are

- The community has demonstrated willingness to take positive action to resolve past problems;

- Newly elected officials or recently hired staff have demonstrated a new attitude toward NFIP compliance on the part of the community;
- There are only isolated instances of violations or a single program deficiencies (rather than a pattern of widespread problems);
- The community has had no prior contact with FEMA;
- A particular remedial measure would undermine the credibility of local officials or their efforts to achieve compliance; the present owner of a property in violation was not the owner at the time the structure become noncompliant; and
- Due to lack of local resources, the community has had to rely on the availability of technical assistance from outside sources (FEMA, the state, or other entities).

Some examples of aggravating factors listed in the guidance are:

- The community has not demonstrated willingness to resolve past problems;
- There is a history of prior violations or program deficiencies identified and brought to the community's attention;
- There is a pattern of widespread program deficiencies or violations;
- Deficiencies in the local program have resulted in increased exposure to flood losses;
- The community has receive prior technical assistance; and
- The violations occurred recently.

The variations among FEMA staff and states in how they interpret “maximum extent possible,” the uncertainty about the standard “full extent of legal authority,” the natural differences in approaches to technical assistance and enforcement around the country, the range of mitigating and aggravating factors that may be present, and the considerable discretion allowed to FEMA staff by both the official guidance documents and the situation, result in a range of different possible outcomes for any given compliance problem. Further, FEMA officials acknowledge that the success of strategies to remedy violations may be affected by a lack of community resources or the discretion of the judicial system.

This variability may be of concern if FEMA wishes to meets its goal for “consistent and similar treatment of like-situated communities” (FEMA 1989). Even though there is wide variability among the community characteristics and the problems that arise, some degree of consistency is needed for reasons of equity, to make any action FEMA takes defensible, and to ensure as much similarity in flood risk to similarly-situated buildings as possible so that actuarial insurance rating is on a sound footing.

However, the flexibility is sound from at least three standpoints. First, it is more efficient to allow decisions to be made in the field by the staff persons closest to the decision than to have centralized review of each decision, which would be time-consuming in a process that is already

over-long (see discussion below). Second, the ordinances that are being violated are local matters and in the end the local government has responsibility to resolve problems that arise from them and to find ways to make the enforcement of the ordinance provisions workable and effective now and for future situations. There needs to be some flexibility in state and federal approaches to allow the local government to make its own decisions about this. Third, research has shown that the deterrence effect of clear-cut sanctions diminishes greatly for violations that are rare or idiosyncratic. For all three of these reasons, allowing discretion to the “inspectors’ is considered a wise policy and is followed in other government compliance programs. It might also be added that there is no way to know what implementation problems might arise if a strict, by-the-book system with no flexibility were used.

6.3.1 Variable Duration of Enforcement Actions

The length of time between the beginning of enforcement through the successive steps of an enforcement action varies widely. FEMA headquarters was unable to provide the study team with an average of the length of time between the identification of substantive violations and/or program deficiencies and the placement of the community on probation. Cases vary by the types of violations, the options for mitigation, turnover of community officials, occurrence of a disaster, and the cooperativeness of the community officials. They estimated a range of between one and “several” years. This is borne out by the data on open CAVs, discussed above in Section 5.1.2. The implication of this is that known program deficiencies and violations are allowed to persist in those communities. In interviews with the study team, federal, regional, and state officials agreed that this is happening.

FEMA and most states have a preference for working cooperatively with the community, providing consultation and technical assistance, to resolve compliance problems without resorting to sanctions. This is one main reason that there can be a considerable period of time between the point at which program deficiencies and violations are identified and the point at which they are all resolved or, at the other extreme, FEMA acts to impose sanctions on the community. The question of how long is “too long” may well be unanswerable, given the wide range of local circumstances that FEMA and the states face in enforcing compliance and considering the trade-offs in staff time, political capital, documentation, and other factors that would have to be made to hasten the process.

6.4 Probation

If efforts fail to correct program deficiencies and/or remedy violations in a community after FEMA or the state has requested it, the community faces sanctions from FEMA, the first of which is probation. Probation is the *formal and public* notification to the community that it is noncompliant and may face suspension from the program. When a community is placed on probation, NFIP flood insurance remains available but all policyholders in the community are assessed an additional fee (or surcharge) of \$50 per year. Probation was introduced in the early 1980s as a tool for obtaining compliance and as a formal precursor to suspension. The probation process was established by regulation in 1986. Before that, there was no provision for placing communities on probation for failure to enforce. Several regions had been using some form of informal probation, but it was not outlined in the regulations or guidance. As FEMA began to focus more on promotion, monitoring, and enforcement, the need for formal procedures became apparent. The full sequence of events in an enforcement action is displayed in Appendix F.

Probation can be imposed only if (1) the regional office or state has identified one or more substantive program deficiencies or violations; (2) FEMA or the state has conducted a CAV; (3) previous actions to resolve problems through community assistance and consultation have failed; and (4) the community failed to take necessary corrective actions and remedial measures, as specified by the regional office or state.

To commence the placement of a community on probation, the regional director sends a 90-day “probation letter” to the community (the letter is sent at least 31 days before the 90-day period begins). The letter provides a formal opportunity, with a clear deadline, for the community to demonstrate that it has corrected program deficiencies and remedied violations, and thus avoid probation. The probation letter communicates the following information:

- The community will be put on probation unless it takes steps to bring its program into compliance with NFIP criteria;
- A list of program deficiencies and violations;
- Required corrective actions and remedial measures;
- Notification that insurance remains available during probation; and
- Notification that a \$50 surcharge will be applied to all policies during probation.

Once the 90-day period begins, the regional office issues a press release describing the impending probation. FEMA also notifies the community’s Congressional members of the impending probation.

If, after the 90-day period has ended, the community still has not satisfactorily corrected the specified programs deficiencies and remedied the specified violations, probation becomes effective and the surcharge is imposed.

These steps were crafted at the creation of the NFIP compliance program to allow communities “due process” in addressing the impending sanctions. With this procedure, community officials have little basis for complaining that they were taken by surprise or were not given time to explain or remedy the situation.

While a community is on probation, the regional office and/or state staff continue to work with the local staff and officials to resolve the compliance problems. The probationary period lasts until the compliance problems have been addressed satisfactorily, according to a timetable set by the regional office or state. If the community is making progress when the deadline arrives, the probationary period can be extended. After the compliance problems are addressed, the probationary period can still be extended for a fixed period of up to another year, if the program deficiencies and violations were multiple and substantive and future compliance by the community is in question. In cases of such extensions, FEMA guidance recommends that another CAV be conducted to determine if probation can be lifted.

6.4.1. Effectiveness of Probation

Throughout the NFIP's history, 104 communities have been threatened with probation for failure to enforce through probation letters from the regional office, according to FEMA. About half of these communities remedied their violations in the allotted time period and avoided probation. The remaining 49 were placed on probation. Forty of those have had probation lifted and have been returned to compliant status (see the complete list in Appendix D). All of the FEMA regional offices have issued at least one probation letter, and all regions have had at least one community placed on probation. Communities on probation as of October 31, 2003 are listed in Appendix E.

Based on these numbers, the threat of probation (in the form of the probation letter) results in compliance about half of the time. Probation itself has yielded compliance in about 72 percent of the cases in which it has been used. The combination of the probation letter and the actual imposition of probation has been successful in bringing to compliance 85 percent of the communities on which it has been used. This suggests that formally threatening and using probation has been quite effective in bringing about community compliance.

What is not (and cannot be) known is the number of communities that were induced to remedy violations and correct program deficiencies simply by the *prospect* of receiving the probation letter, realizing that once the letter is received probation is the next step. In this sense, the mere fact that the NFIP has a stated probation procedure serves to deter noncompliance.

However, there is a strong sentiment among the officials interviewed by the study team that the number of communities that have been formally threatened with the prospect of probation is relatively small when compared to the number of communities in which serious violations were found and documented.

Number of Candidates for Probation

Because the NFIP compliance model anticipates that addressing a given community's compliance problems could take up to a year or more, and because both FEMA and the states prefer to use a cooperative approach and apply sanctions only after that fails, for purposes of this analysis the study team considered two years to be a reasonable cutoff point between communities that are making progress and those who should be candidates for stronger measures, namely a probation letter as a precursor to probation.

The study team used the number of CAVs left open for longer than two years as the best available indicator of the number of communities with serious compliance problems that have not been subjected to enforcement action. As was shown in figure 8, that number is about 30 percent of all CAVs conducted during the five-year period for which records were analyzed.³⁶ This is in line with an estimate posited by FEMA officials in one region, who said that about 25 percent of participating communities in two states in their region had serious compliance problems. Based on the assumption that the five-year period studied is typical, this means that, nationwide, something like 250 communities every year are potential candidates for probation

³⁶ It should be noted again that the CIS data are not wholly reliable, because of potential inaccuracies and because they do not contain 100% of the CAV records.

letters. Even acknowledging a large number of extenuating circumstances, there is little explanation either in the traditional compliance and enforcement literature or within FEMA's own technical-assistance-based model to explain why, in 20 years, only 104 probation letters were issued. The compliance and enforcement literature indicates that, even within a model emphasizing that many or even most compliance problems arise through mistakes, some penalties and enforcement threats are required as a deterrent to "bad apples" to keep the threat of enforcement credible and keep current and future development out of harm's way (Scholz 1997).

These numbers suggest that the enforcement component of the compliance process is not working well at some point between the discovery of violations and the issuance of the probation letter. Further, if the formal threat of probation (probation letter) and the imposition of probation are effective 85% of the time, and there are many communities with records of extended time periods without correction of compliant problems, then FEMA should be using this technique more often.

Obstacles to Issuing Probation Letters

The interviews the study team conducted with state, regional office, and FEMA headquarters officials revealed a range of real and perceived obstacles to issuing probation letters. Some FEMA regional offices appear to be reluctant to issue probation letters that are based on state findings and documentation. Some regional directors apparently are reluctant to issue probation letters at all. FEMA and state staff opinions may vary about how hard the community is trying and how long it should be allowed to "keep working" on its problems and this can lead to disagreement over how much more needs to be done before a recommendation is sent to the regional director that a probation letter be issued. Similarly, there can be conflicts among FEMA personnel (particularly between the field staff who have actually met with the community and the senior management, who probably have not) over how much documentation is enough to substantiate the recommendation for a probation letter, and between FEMA and state personnel on the same topic. Shifts in personnel within state and regional offices cause enforcement actions and paperwork to be delayed, duplicated, and in some instances, simply started over.

Another reason for reluctance may be that probation is necessarily seen as a precursor to suspension. Although there is no time limit for a probationary period, and suspension is not automatic, regional directors and regional staff realize that, once a community is on probation, suspension becomes a real possibility. But because suspension of a community can only be done by headquarters (the Federal Insurance Administrator has the authority), if the regional office personnel perceive a lack of support from headquarters, or if it is not clear how much or what documentation headquarters will require from the regional office before it imposes suspension, the regional office staff and/or the regional director may hesitate to take the first step in the process (sending the probation letter).

It also should be noted that regional office staff and regional directors change over time, while compliance problems develop slowly and can take a long time to resolve, even under the best of circumstances. Thus a compliance problem in a community can outlast the personnel who first discovered and documented it, and also worked with the community, providing technical assistance at the onset of the enforcement action. The study team's interviews indicated that there have been instances in which a staff person responsible for a community with enforcement

problems failed to resolve a community's compliance problems after several months or longer, and then moved on to another position, leaving the unresolved situation to a new person.

The study team also encountered in interviews the contention that some enforcement personnel “game” the compliance timeline by delaying more severe actions (such as enforcement) knowing that they may leave their current position before having to take the unpopular step of recommending a community for probation. As a political appointee, a Regional Director also realizes that his or her tenure is limited and may wish simply to avoid an enforcement action that may be politically unpopular and still be unresolved when he or she leaves the regional office.

Still another possible reason for the seeming lag in action on recommendations to issue probation letters is that senior regional office staff (including the appointed regional director) have responsibilities beyond the NFIP. The occurrence of one or more major disasters within the region, for example, could overwhelm their capability to address complex and sensitive NFIP enforcement matters while the disaster response and recovery activities are underway (which can be a year or more).

Some caution on the part of FEMA senior personnel is certainly warranted. The probation letter (the last step before probation) is a big step because it is a formal communication from one government to another and has a specific deadline. Senior FEMA regional officials rightly want to avoid having to back down from this position and also realize that, once the community's deadline has been reached, action must be taken. To issue a probation letter, the FEMA regional office must be prepared to follow through and place the community on probation if needed.

Despite these explanations for a regional office's not proceeding to the step of issuing a probation letter, it should be possible for FEMA to take a more aggressive stance towards limiting the length of time a community can languish in noncompliant status. It may be feasible, for example, to set an outer limit of, say, two years for a community to address its problems after a CAV, after which the probation letter becomes automatic. An automatic deadline such as this would move the enforcement process along more quickly to the probation letter step, which has been proven effective.

6.4.2 Effectiveness of the Probation Surcharge

When FEMA first proposed a probation surcharge, it selected an amount of \$50, which equaled about 25 percent of the average premium being charged at the time (April 1985). According to FEMA, “[t]his additional premium in communities that do not adequately regulate development reflects the added liability to the program that results from increases in potential flood damage” (*Federal Register*, 4/15/85, p. 14904). In its proposed rule, FEMA solicited public comment on the appropriate method of implementing a probation surcharge: the proposed flat charge per policy or a percentage increase applied to the premium of each policy. This second alternative would generate approximately the same amount of revenue as the proposed flat charge of \$50. According to FEMA “By establishing this probation procedure and charging this additional premium, FEMA expects to be able to obtain community compliance with Program requirements prior to reaching the point where there is no alternative but to suspend a community...” (*FR*, 4/15/85, p. 14904). Overall, the comments received by FEMA supported the probation surcharge but they “...varied as to the type of surcharge favored and the mechanics of

imposing probation on a community” (*FR*, 9/4/85, p. 36016). FEMA agreed with those comments that said the proposed amount of \$50 would be too high for some policyholders. As a result, FEMA reduced the surcharge to \$25, believing this amount would “still be effective in drawing the attention of the policyholders to a community’s noncompliance and obtaining their support for actions to avoid suspension” (*Federal Register*, 9/4/85, 36016-7). The \$25 surcharge was in place for several years and in October 1992 was increased to \$50.

The amount of the surcharge for communities on probation has not changed since 1992, even though the average flood insurance premium has. In 1985, the average flood insurance premium was \$224. In 2003, the average premium had risen to \$446. The average premium is expected to increase further in the wake of recent years of major hurricane damage. The average claim payment over the five years between 1983 and 1987 was \$8,917. This increased to \$20,163 for the five years between 1999 and 2003. If the added liability to the program resulting from a community’s noncompliance amounts to about 25 percent of the average premium, and the surcharge is meant in part to account for that additional liability, then the amount of the surcharge now should be at least \$100. Based on FEMA statistics, the surcharge for probationary communities has not kept pace with increases in flood insurance premiums, or flood damage.

In its interviews with state and regional office personnel, the study team encountered some sentiment that the surcharge was too small to be effective in inducing community compliance. However, FEMA headquarters officials stated that the amount of the surcharge is not important, as long as it is enough to draw the policyholders’ attention to the community’s noncompliance. In the estimation several floodplain management officials, the surcharge alerts policy-holders to deficiencies in the community’s compliance with its floodplain ordinance and creates a motivation for citizens to pressure community officials and support the remediation of violations. One FEMA official stated that the agency was concerned that if it set the surcharge too high, policyholders would let their policies lapse.

Little is known about the impact of increasing or decreasing surcharge amounts on compliance with violations. Indeed, as discussed in the review of the research literature, large penalties are not always necessary to elicit a response from those monitored if conditions are otherwise conducive to compliance. It is possible that the threat of a higher surcharge would motivate communities both to prevent and remedy violations before, rather than after, probation procedures are enacted. Some officials acknowledged that it may be time to consider an increase in the surcharge, especially if there had been some concerns that an increase in rates of one-quarter of the average would motivate further compliance. Concerns about equity may suggest a need to scale penalties slightly, (e.g., step-ladder) based on individuals’ premiums.

6.4.3 Indefinite Probationary Periods

The rule of thumb for the NFIP compliance program is that communities are put on probation for one to three years. This is a typical length of time for communities to reach a “point of accomplishment” in their programs and to correct all program deficiencies and remedy violations to the maximum extent possible. Probation is sometimes extended for another year after that point, with monitoring by the regional office or state to ensure that the community in fact is able to administer its ordinance properly.

In determining whether to lift probation, some officials told the study team that they also consider the community's willingness to work with regional officials and the level of cooperation and effort expended by the community. FEMA officials stated that there is no upper limit to how long a community can remain on probation as long as it is working on its compliance problems.

The study team analyzed the probation records obtained from FEMA and determined that, of the 41 communities that have been placed on probation and subsequently returned to compliant status, the average duration of the probationary period was 27 months. Only two communities were on probation for more than 4 years—one had a five-year probationary period and one had 10 years of probation.

Of the seven communities currently on probation,³⁷ four have been on for less than 2 years and one for slightly over 2 years. However, one Indiana community has been on probation for over five years, and Guam has been on probation for more than 11 years, the longest probation period in NFIP history (see box).

For communities that have been on probation for many years, the question arises why suspension procedures have not been instigated. FEMA officials stated that those communities that have been suspended to date were only those that did not cooperate, stonewalled the program, and were unresponsive to remedying their compliance problems. This indicates that FEMA reserves the suspension option for situations for the most egregious cases. FEMA headquarters and regional office staff use their judgment in determining when that point is reached, and do not necessarily agree. The case of Guam, although perhaps a unique situation, shows clearly how steps in the right direction can be followed by backsliding and how large numbers of factors enter into the decision about whether to move from probation to suspension.

6.5 Suspension from the NFIP

If a community on probation fails to remedy its violations and/or program deficiencies during its probationary period, the Federal Insurance Administrator (at FEMA headquarters) can suspend the community from the NFIP. A community may only be suspended when its identified violations and program deficiencies are both multiple and substantive. FEMA staff must verify through a CAV the violations and program deficiencies that result in suspension. FEMA does not specify the maximum time that communities can remain on probation before facing suspension. Instead, decisions about whether to extend the community's probationary period or proceed with suspension are made on a community-by-community basis. Before the 1980s there was a suspension process for failure to enforce, but it was difficult to use since there was no probation process or other precursor to the suspension show cause letter. The 30-day show cause letter and the 30-day suspension letter were instituted in the 1976 revisions to the NFIP regulations.

Suspended communities lose all of the benefits of participation on the NFIP. Property owners in such communities lose their eligibility to purchase or renew flood insurance. Flood insurance is neither sold nor renewed in those communities during the suspension period.

³⁷ Figures are as of October 2003. Two other communities are on probationary status after being reinstated from suspension. Those two are not included in this analysis.

Property owners in the flood hazard areas of suspended communities are not eligible for certain grants or loans from federal agencies or certain funds after presidentially declared disasters.

A community remains suspended until it corrects all program deficiencies and remedies all violations to the maximum extent possible. At that point, FEMA can reinstate the community into the NFIP and also may impose certain additional conditions. For example, for up to one year after being reinstated, suspended communities could be required to report to the regional office all activities on the floodplain and each variance they grant. The regional office could visit after a specified amount of time to ensure that the community is enforcing its floodplain management regulations. Once reinstated, property owners in the community again can obtain flood insurance coverage.

Throughout the NFIP's history, 10 communities have been suspended for failure to enforce. Of those, six have been reinstated (two on probationary status, four on full status). Four of those communities remained suspended as of October 2003 (two had been on suspension for 12 years, one for five years, and one for 3 years). Of the six that have been reinstated, the length

Guam's History of Probation

Guam's history with the National Flood Insurance Program (NFIP) illustrates some of the difficulties faced in determining whether a community should be suspended from the program and also in implementing that suspension.

Located to the south of the Mariana Islands in the western Pacific, Guam is highly vulnerable to natural disasters, including typhoons, earthquakes, and flooding. Guam elected to join the NFIP in 1985, making flood insurance and disaster assistance funds available to its over 166,000 residents. In 2006, there were 233 flood insurance policies active in Guam, for \$35 million in coverage.

Compliance problems in Guam were first discovered in 1985 and noted during subsequent CAVs. FEMA identified more than 30 construction violations, many on the banks of the Agana River, and Guam was placed on probation in 1992. Several years later, Region IX requested that Guam be suspended from the program. FEMA headquarters did not support the recommendation for suspension, and Guam remained on probation. In 1997, the Region again recommended that Guam be suspended. This time headquarters agreed and began suspension procedures. However, several days before implementation, Typhoon Paka struck Guam and FEMA headquarters decided to halt suspension. According to FEMA headquarters, suspending Guam while it struggled to recover from a major natural disaster would have exacerbated the effects of the damage and suggested that FEMA and the U.S. government were unsympathetic.

Between 1998 and 1999, Region IX and the government of Guam developed a three-year retrofit plan for mitigating noncompliant structures, educating floodplain management participants, and obtaining buy-in from FEMA headquarters and the government of Guam. NFIP training sessions were provided to Guam government officials, local building contractors, developers, architects, engineers, lenders, and insurance agents. Hazard Mitigation Grant Program (HMGP) funds were allocated to retrofit construction violations in exchange for the government of Guam's building a flood control channel. However, the government of Guam did not fully implement the retrofit plan or construct the flood control channel. Region IX issued a third recommendation to FEMA headquarters for suspension from the NFIP in April 2003. As of September 2004, headquarters was still considering the recommendation. The Region has continued to renew Guam's probationary status. Guam remains a participant in the NFIP, although its policy holders pay a \$50 surcharge on their flood insurance policies.

Guam's failure to comply with NFIP regulations has implications for the NFIP, as well as the residents of Guam. First, it is notable that, although probation has been 85% effective in producing compliance among the rest of the NFIP, 12 years of probation apparently have not improved the government of Guam's ability to implement and enforce its own floodplain ordinance. The reasons for this are not entirely clear, although it is known that pro-development political pressures and budgetary problems have played a role. Guam has been the subject of five major disaster declarations since 1997, including Typhoon Paka, which caused over \$200 million in damage. This recurring disruption doubtless affects the ability of Guam's government to make steady progress.

All these factors, among others, come into play as compliance is pursued and enforcement sanctions considered. Any judgment about the propriety of probation vs. suspension must weigh —among other factors—the community's unusual situation, the time-consuming and expensive process of making onsite visits; the small number of flood insurance policies in place; and the detrimental effect of Guam's long probationary period serving as a suggestion that FEMA is unwilling to suspend a noncompliant community.

of suspension varied from less than one year to 12 years. The ten suspended communities are distributed among five of the FEMA regions (III, IV, V, VII, and VIII). Communities on suspension as of October 31, 2003 are listed in Appendix E.

6.5.1 Effectiveness of Suspension

Based on this admittedly small number of instances, suspension appears to have been slightly less successful at bringing about compliance than has probation: only 60 percent of suspended communities historically have returned to the NFIP. However, considerable caution should accompany any direct comparison because communities that remain suspended tend to be at once the most recalcitrant and those with almost no development pressure and few or no insurance policies. Thus they have little to lose. In contrast, because of prohibitions on federal assistance that accompany non-participation, no community with floodplain development can afford to remain outside the program.

Because there is no flood insurance in force in those communities, the Flood Insurance Fund is not at risk (as it is in probationary communities). Although nonparticipating communities are not eligible for many types of disaster assistance after a flood disaster, because no suspended community has experienced a presidentially declared disaster, it is not clear whether public opinion and political pressure in the aftermath of such an event would prevent taxpayer funds from being used to alleviate the losses suffered by the uninsured residents of these nonparticipating communities.

7.6 Obstacles to Enforcement of Community Compliance

The study team identified two problematic steps in the enforcement process used under the NFIP compliance program. First, probation letters, which are the first step in putting a community on probation, are not issued frequently enough or only after a long period of time. Second, a few communities spend too much time on probation before being suspended. Both of these logjams can be attributed in part to a number of factors discussed above, including internal matters such as turnover in agency staff, competing demands of disasters and other work, and honest professional disagreement about whether stronger enforcement measures are warranted in a given situation. There are three additional factors, discussed below, that contribute to making enforcement difficult: confusion about documentation; duplication of effort, and political pressure. In addition, overall compliance efforts are undermined by a perception among communities and states, and sometimes regions, that FEMA is unwilling to implement sanctions.

6.6.1 Uncertainty about Documentation

Staff from FEMA headquarters stated that the implementation of sanctions is hindered by insufficient documentation of violations at the regional and state level. They said that proper documentation of violations is essential because it protects communities against false accusations and insulates FEMA from legal action and political pressure over unfair decisions: “A well-prepared argument will result in a successful sanction and little political intervention.” The documentation, written communications with the community, procedures required for remedial action, and the schedule of steps to take to avoid probation must be definitive so that the community is offered the protection of due process contemplated in the NFIP regulations on the

probation process. Headquarters staff cited several instances in which requests for implementation of sanctions were simply unsupported by the accompanying information.

For their part, the regions realize that headquarters wants thorough documentation, but do not know how much. There is a perception that, out of fear of repercussions and/or political pressure, headquarters insists on extreme amounts of documentation and exhaustive visits to community to provide additional training and technical assistance. This results in a long, sometimes indefinite, period during which ever-more assistance is provided and additional amounts of documentation are accumulated.

6.6.2 Duplication of Effort

The insistence by some regional offices that FEMA staff confirm compliance problems identified by states creates the potential for duplication of effort. Several state floodplain coordinators interviewed by the study team contended that FEMA duplicates work already done by the states, slowing the enforcement process, frustrating state and regional officials, and delaying probation/suspension procedures.

One state's procedure for sanctioning communities is to send up to three letters requesting that the community remedy compliance problems within a given deadline. The state first allows for communities to respond within 90 days, then 60 days, and finally 30 days (a total of six months). If the community does not remedy the violations within the time period, the state requests that the region impose probation. However, the regional office insists on duplicating the process of sending warnings to the community before passing a recommendation to headquarters. Further delaying the process, headquarters sends its own set of warnings to the community. This triplication of enforcement procedures delays sanctions for long periods of time and creates the impression that FEMA is reluctant to implement sanctions. A state official offered the example of a community that was found to have over 100 violations in 1993, but was suspended from the program only in 2003, due to the lengthy process of documentation.

It should be noted that FEMA's guidance on state documentation of compliance problems states that a community "may be placed on probation based on hard documentation developed and provided by States" (FEMA 1986, p. 7-1). However, the standard for *suspension* differs: a regional office may not recommend to headquarters that a community be suspended solely on the basis of documentation provided by the state. For suspension, the FEMA regional staff must visit the community and make their own determination about the deficiencies, violations, and local progress in addressing them.

FEMA's guidance further states that the conduct of enforcement actions (placing a community on probation or suspension) "is a Federal responsibility and will not be delegated to the States" (FEMA 1986, p. 7-1).

It seems clear that a state cannot reasonably expect to place a community on NFIP probation on its own authority (since it does not have that authority), but equally clear that it is within a FEMA regional director's discretion to rely solely on state documentation and recommendations regarding probation as a trusted partnership. However, based on the confusion evidenced by the study team's interviews, this guidance may need clarification.

6.6.3 Political Pressure

Political pressures from members of Congress on behalf of constituent communities can affect the implementation of the NFIP and community compliance. Political considerations were among the reasons for the establishment of the probation process to begin with. Before 1976, the NFIP did not have a formal probation process or the due process provided by a 90-day probation letter and a 30-day show-cause letter before suspension. Noncompliant communities were simply suspended without much prior notification. As a result, suspensions resulted in harsh immediate reactions from congressional members. The formal probation process instituted in the mid 1980s laid the groundwork for suspension and gave FEMA documentation of noncompliance and refusal or inability to remedy violations. “Generally, [FEMA] found that communities that had been through the [formal] probation process and still not complied got little sympathy from their Senators and congressmen,” said one FEMA official.

However, the study team’s interviews with regional and state officials revealed that both probation and suspension are typically highly politically charged actions. A number of states noted that FEMA was reluctant to initiate enforcement sanctions against communities in situations in which they encountered political pressure. Several states identified participating communities within their states that they believed had not been sanctioned because of pressure from within FEMA headquarters or from members of Congress. For example, FEMA put the Borough of Shickshinny in Luzerne County, Pennsylvania, on probation for 10 years but never suspended it because of Congressional pressure, according to a Pennsylvania state floodplain management official. FEMA eventually ended Shickshinny’s probation in April 2002 when the borough approached the owners of six homes violating NFIP regulations about options to retrofit. However, as of 2005, the six non-compliant structures had not been retrofitted.

It should also be noted that FEMA’s regional directors are political appointees. As such, they may be more sensitive to pressures from Congressional members or other officials not to sanction communities for noncompliance. This can result in a similar bottle-neck in the probation process, if the regional director is unwilling or hesitant to pursue the procedures for applying sanctions.

6.6.4 Perception of Weakness in Enforcement

Several state officials reported in interviews their belief that FEMA headquarters is non-supportive of enforcement actions. When the ASFPM asked whether the regional offices support enforcement actions in a state, almost half of the states said they received adequate support and 58 percent said they sometimes did or did not at all (Note: percentages do not add up to 100 percent because some states chose more than one answer). One state official opined that, within FEMA, enforcement is an unpopular solution.

Additional support for follow-up enforcement activities was the request most commonly made by states, including adherence to a schedule and commitment to enforcement action. One state floodplain management official told the study team that when he has recommended a community for suspension, he has felt pressure from FEMA to delay or withdraw sanctions.

Regional office staff, in turn, perceive an unwillingness to enforce from headquarters. Four regional officials described, in the words of one official, a “climate of a lack of

enforcement.” For example, a regional official described a community that the regional office wanted to place on probation but headquarters insisted that the region work with the community. A division director said he wanted clearer guidance from headquarters on how the regional office should use sanctions.

FEMA headquarters personnel, however, profess willingness to go through with enforcement; they claim, rather, that the regions are not asking them to put communities on probation. FEMA headquarters officials indicated they encouraged regional directors to overcome their reluctance to make politically difficult decisions.

In short, each group perceived the other to be too limited in its efforts to push for the remediation of violations and to implement sanctions. But federal, regional, and state officials were united in their belief that probation and suspension are imposed too infrequently on noncompliant communities.

There is a perception among FEMA regional office and state staff that communities believe (or could believe) that FEMA “has no teeth for enforcement” and consequently the threat of probation and suspension is a weak tool. However, it is not known if communities across the country do have that perception; subsequent proactive behavior by communities before they are put on probation is difficult to explore and parse from actions that might occur anyway, as discussed in the section on research literature. About 50 communities have been placed on probation and 10 suspended. It is not clear how many enforcement actions across the nation that result in probation or suspension would be “enough” to constitute a viable threat, although it is obvious that the number of actions that have been carried out so far has operated as an effective threat to some extent. The literature suggests that, if qualitative research indicates that the threat is considered credible and consistent by all involved, the anticipated outcome will be little need for placing communities on probation or suspension. The communities simply would learn not to take that risk. The research literature reviewed by the study team did not provide an answer to the question of the size of threat needed to induce certain behavior, nor were there other governmental programs similar enough to the NFIP to serve as a baseline.

Even if some of the weaknesses noted are the perceptions of only a few staff from the regional offices and states, such a perception still can harm compliance levels. If FEMA is believed to be reluctant to enforce compliance through sanctions, this will affect the efforts by both the states and the participating communities to ensure compliance. For example, a state could document violations by a community and send this information to FEMA, only to find that such documentation is not “enough” to permit FEMA to impose a sanction. States and participating communities will feel their efforts are pointless and may not apply themselves as vigorously as before.

6.7 Discretion and Trade-offs in Enforcement

FEMA believes that compliance and flood safety problems can be remedied more easily if the community is participating in the NFIP than if it is not. Therefore, FEMA has an interest in working with communities even when they are on probation to help them remedy violations, rather than rushing to impose suspension. In other words, FEMA believes in allowing communities to remain in good standing with the NFIP as long as they are working to remedy their compliance problems. This policy means that some enforcement actions in fact may last a

long time, but result in compliance in the end, as evidenced by the communities that have faced probation, some of it lengthy, but have eventually come to implement their flood hazard reduction measures adequately. and that regional offices and states retain discretion in determining whether the community is working in good faith to address the situation.

Unlike some issue areas in which compliance with governmental programs is clear cut, each of the steps in the enforcement process for the NFIP involves professional judgment, and the use of discretion on the part of floodplain management personnel in FEMA and the states. Those decisions often involve making implicit and sometimes explicit trade-offs. For example,

- The usefulness of consistent and precisely stipulated enforcement procedures (desirable from a nationwide standpoint) must be weighed against the flexibility that is needed by regional office and state staff to handle idiosyncratic individual compliance situations effectively.
- The negative effects of probation or suspension for an individual community (increased cost or loss of insurance coverage for residents and political embarrassment for the community) must be weighed against the possible future deterrence effect for other unspecified communities in the region of imposing sanctions more readily.
- The potential cost to federal taxpayers and other policyholders of allowing a noncompliant community to remain in the NFIP for a long period must be weighed against the value of eventually bringing that community to full compliance so that it bears responsibility for its flood risk in the future.
- The much more tangible political costs of imposing probation on or suspending a specific community must be weighed against the value of visible enforcement as a deterrent to noncompliance by other unspecified communities in the future.

It can be seen that the best balance among these factors can vary from situation to situation. In fact, these tradeoffs interact together in a larger system where there may not be one unique overall solution and where a given actor may only see their small part. This is an important and inescapable characteristic of enforcement in the NFIP.

6.8 Findings and Recommendations on Enforcement of Community Compliance

It is important to note that this study cannot verify whether FEMA's enforcement methods have been detrimental to nationwide compliance nor can it solve the complex cost-benefit equation that would lead FEMA to an "optimal" solution that combines cooperative approaches and sanctioning in appropriate measures. It may be that the NFIP compliance program functions relatively well along the lines of certain other voluntary compliance models, meaning that the motivation of most community leaders to do the right thing, the incentives built into the program, and other factors generally are stronger determinants of community compliance than the threat of enforcement. The research literature supports the idea that, for regulated entities with a "culture" that is more supportive of compliance or for which compliant

norms are supported,³⁸ a model focused on support and technical assistance over swift penalties and deterrence such as that used for the NFIP is sufficient. In those cases, a strong penalty for violators may not be necessary as a deterrent.

However, the more difficult issue involves the compliance of communities that do not have supportive attitudes toward making the necessary changes. The interviews conducted by the study team and the statistics on the length of time needed to bring some communities to compliance and/or out of probation, coupled with the handful of communities that have been suspended and/or withdrawn from the program in the face of FEMA and state insistence that they adhere to the program requirements, indicates that there are a certain number of communities whose attitude toward the NFIP can be characterized as recalcitrant. Although the research linking compliance levels to the credibility of a sanction is limited, intractable to clarify through theory alone, and difficult to apply across programs, it generally does support the beliefs of the regional office and state officials quoted above who think that a well-known reluctance to sanction can harm compliance levels, particularly among the more unwilling communities. As noted in Section 1.2.4, the literature underscores the general understanding that compliance initiatives are most effective if they are supported by some credible threat of enforcement action.³⁹ Without that threat, regulatory programs become more like cooperative or voluntary approaches (which, as noted above are effective mostly for communities that are already cooperative). Researchers note that in many cases, “Absent the plausible threat of enforcement, cooperative approaches to achieving compliance seem to have only limited effect on regulated entities” (Crow *et al.* 2000). The evidence and research suggests that, in addition to using its cooperation-based approach, FEMA also should take steps to increase the belief among communities that the agency is willing to use its probation and suspension sanctions more readily than it has to date. Some movement in this direction appears to be warranted.

Even if the NFIP’s enforcement mechanism remains mostly reliant on cooperative approaches rather than sanctions, changes may be required to meet the assumptions and conditions under which those cooperative approaches will be most effective. A study by the Canadian group Pollution Probe (1999) reviewed voluntary initiatives in environmental protection and resource conservation and provided an appropriate framework for cooperative enforcement strategies. They concluded, in part, that

The ideal voluntary initiative has clearly stated and publicly supported goals, targets, and timelines. Progress is measured and reported at regular intervals, with problems addressed openly and expeditiously. The initiative is evaluated and adjusted, as necessary, with the full participation of stakeholders (Pollution Probe 1999).

Although the mostly-cooperative approach toward enforcement in the NFIP is not identical to the types of initiatives considered by Pollution Probe, the criteria for effectiveness they set are largely relevant, and as this section indicates, the NFIP compliance program is not meeting all of

³⁸ See, for instance, Compliance Information Project (2000) regarding the views of environmental compliance inspectors.

³⁹ See, for instance, Cohen (1998) and the U.S. EPA’s Compliance Information Project (1999), which summarizes the literature on incentive-based initiatives and enforcement as well as other enforcement literature.

the conditions.⁴⁰ Deadlines set for compliance are not always clearly stated or adhered to, progress is not measured and reported consistently or publicly, state and especially local stakeholders are not full participants in NFIP decision making, and the guidance that is provided is sometimes unclear, contradictory, or too general to be useful in all cases. These shortcomings in having a fully cooperative approach point out a tension within the NFIP compliance program: personnel representing the NFIP are expected to be helpful and elicit the cooperation of local staff and officials in a joint endeavor (minimizing flood losses and costs by participating in the NFIP), but when compliance problems arise, those same personnel are expected to take on the role of enforcers. This is a problematic transition not just for the staff involved, but for the program as well.

Although the evidence discussed in this section supports the contention that FEMA may be using its strongest sanctions insufficiently to achieve maximum or even better compliance, a bigger issue facing the NFIP is not necessarily how to get closer to achieving full compliance. Instead, FEMA must deal continuously with a more complete cost-benefit analysis of the trade-offs involved between a willingness to use sanctions more regularly and a reliance mostly on cooperative approaches. These factors include trade-offs between, on the one hand, safety and financial benefits that result from stronger deterrence as well as potentially quicker resolution of violations and deficiencies and, on the other hand, the impact on community policyholders if a flood occurs, the political capital lost with local governmental officials, and other political costs.

The intangible costs and benefits and the wide variability in the circumstances of compliance problems make it impossible for this study to provide FEMA with the “best” approach to enforcement of community compliance. The study team does, however, recommend ways to improve the procedures used in obtaining compliance. These changes should enable the NFIP compliance model to better meet the conditions necessary for cooperative approaches to be successful, according to the research literature. There are also steps that could be taken to reduce the political pressures and other factors that undermine the effectiveness of the NFIP compliance approach.

FEMA should issue clear guidance on what documentation is required for probation and suspension. Confusion about the documentation needed was widespread. The need for clearer guidance is especially keen because states conduct the majority of CAVs, which are the foundation of enforcement action.

The process of providing technical assistance to noncompliant communities should be finite and well documented. FEMA must know what training and technical assistance each community receives to know when noncompliance ceases to stem from ignorance of NFIP regulations. FEMA regional office and state floodplain management staff should make training available to noncompliant communities and document, continuously and in a standard format, the training and technical assistance that they provide. This documentation should be housed in the CIS.

⁴⁰ It is interesting to note that these conditions of a successful cooperative enforcement strategy are more nearly met by the NFIP Community Rating System, which appears to have a better community compliance performance than the NFIP overall.

Consideration should be given to imposing a fixed time limit for correcting program deficiencies and remedying violations. Although some flexibility is necessary, the study team found that the technical assistance and documentation phase that follows a CAV can stretch on indefinitely.

FEMA should clarify its guidance on “full extent of legal authority.” The study team found some confusion about what was meant by the requirement that a community remedy violations to the full extent of its legal authority. This was of concern particularly in deciding when a Section 1316 declaration is acceptable remedial action.

Consideration should be given to raising the probation surcharge. The study team recommends that FEMA explore the potential effects of increasing the probation surcharge. The investigation should identify whether a higher surcharge would encourage communities to remedy violations to avoid probation, or decrease the length of time a community remains on probation, and thus, the length of time that structures and residents are at risk.

Consideration should be given to using informational and automated methods to increase pressure on communities. The literature indicates that, in voluntary or cooperative enforcement programs, information can be used to cajole supervised entities into making changes. This perhaps could take the form of a requirement that the community notify all policyholders and/or the media that a surcharge may be imposed and that policyholders may become ineligible for flood insurance if the remedial measures are not taken. Another variation would be to impose smaller, interim penalties such as the required mailing an automatic, involuntary penalty. That is, perhaps two years after a CAV is opened but not closed, an automatic mailing is done to policyholders and the media. Then, in another year, probation is automatic. The advantage of this approach is that there is no villain—the requirement and the penalty are in the statute or regulations.

FEMA should take steps to increase the belief among communities, FEMA staff, and state staff that the agency is willing to use its probation and suspension sanctions more readily than it has to date. This sentiment, whether true or not, prevails among both FEMA and state staff and needs to be changed, perhaps by implementing and publicizing more enforcement actions than in the past. FEMA or Congress should consider a procedure of automatically suspending a community after it spends a set period of time on probation, with exceptions allowed by regional officials contingent on clear indicators of progress. The difference—that active (rather than passive) steps must be taken to avoid suspension—could make a real difference in outcomes.

7. SPECIAL ISSUES IN COMMUNITY COMPLIANCE

Throughout the background reading, literature review, and interviews done for this evaluation, three issues recurred as problematic in NFIP compliance, each for different reasons. These topics were given special attention by the study team. The first, the substantial damage/substantial improvement requirement, raises compliance problems because it is complicated and potentially unpopular at the local level. The second, issuance of variances, has the potential to be misunderstood and misused by communities. The third topic, compliance among Community Rating System communities, poses concerns because of the high expectations held for those communities and the lower flood insurance premiums paid by their residents in return for lowered risk. Each of these is discussed in detail in this section.

7.1 The Substantial Damage Requirement

When a building in a community's SFHA is "substantially" damaged or when a property owner makes a "substantial" improvement to a structure, the community must require that the property owner bring the entire structure to post-FIRM standards and comply with all of the building regulations in the community's floodplain ordinance. FEMA defines *substantial improvement* as "any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the 'start of construction' of the improvement"⁴¹ Substantial *damage* occurs when a structure suffers damage (from any cause) equal to or greater than 50 percent of the market value of the structure before the damage occurred, regardless of whether the property owner chooses to repair the damage.

These substantial damage and substantial improvement requirements are the main mechanisms for bringing pre-FIRM structures to post-FIRM standards.⁴² They ensure that increased investments in flood hazard areas throughout the country receive needed protection from flood risk and do not compel additional federal outlays after a flood disaster. Since most pre-FIRM structures were built without the knowledge or identification of flood risks, both requirements work towards reducing the stock of these more flood-prone structures. The substantial damage and substantial improvement rules also affect insurance rates because when FEMA reclassifies pre-FIRM substantially damaged or substantially improved structures as post-FIRM, the structures are re-rated to actuarial rates and are no longer eligible for subsidized flood insurance. Thus, compliance with the substantial damage and substantial improvement rules ensures structural protection and the financial stability of the NFIP.

When a community participates in the NFIP, it agrees to adopt and enforce the substantial damage and substantial improvement rules as part of its floodplain management ordinance. It is

⁴¹ FEMA's definition substantial improvement excludes (1) any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications . . . and (2) any alteration of a designated 'historic structure,' provided that the alteration will not preclude the structure's continued designation." According to an official at FEMA, a participating community has the option of exempting a historic structure from NFIP regulations either through the definition of substantial improvement or through the variance procedure.

⁴² The substantial damage and substantial improvement rules also apply to post-FIRM structures in communities that have undergone map revisions resulting in more stringent regulations, change in zone designations, or higher BFEs. Once substantially damaged or substantially improved, structures in remapped communities must be brought into compliance with the regulations applicable for the most recent map in effect.

the community's responsibility to monitor damage and improvements to properties and declare that substantial damage or substantial improvement has taken place. Communities must then require the property owner(s) to bring the structures to post-FIRM standards. Failure of a community to enforce the substantial damage and substantial improvement rules is a program deficiency and the substantially improved (or repaired) buildings are violations, making the community noncompliant with the NFIP's minimum requirements. Because of the complexity of this requirement, the difficulty communities can have in implementing it, and the consequences of its non-enforcement, FEMA's guidance on conducting CAVs and CACs lists any substantial improvements to existing structures and the number of substantially damaged structures as one factor in determining whether there is likely to be noncompliance in a community and thus that that community warrants a visit from state or regional office staff. Further, FEMA's guidance on community compliance lists a substantially improved structure with its lowest floor below BFE as an example of a substantive violation.

The study team examined community compliance with the substantial damage and substantial improvement requirements. Previous studies have suggested that communities often fail to identify and declare substantial damage or improvement and/or fail to enforce compliance with post-FIRM building standards after a declaration of substantial damage or improvement is made. Through a review of previous studies of the effectiveness of the rule; interviews with FEMA, state, and local floodplain management staff; and analysis of flood insurance claims data, the study team identified both the reasons that the process sometimes breaks down and the actions that FEMA can take to improve implementation of the rules.

7.1.1 Compliance with the Substantial Damage/Substantial Improvement Requirement

Lack of community compliance with substantial damage and substantial improvement rules has been identified in several studies from 1980 through the 2000s (Federal Insurance Administration 1980; Insurance Services Office, Inc. and French & Associates 1992; National Wildlife Federation 1998; Federal Emergency Management Agency Inspector General 1999; Association of State Floodplain Managers 2000). These reports found that noncompliance with the substantial damage rule occurs when communities (1) fail to properly declare structures substantially damaged, and/or (2) fail to monitor reconstruction of substantially damaged structures to ensure that they are brought to post-FIRM standards.

In a report issued by the National Wildlife Federation (1998), researchers found that failure to bring structures to post-FIRM standards after the structures were declared substantially damaged caused the structures to be damaged in later floods. Nearly 15 percent of the repetitive loss properties studied (4,736 structures) had insurance claims that indicated that the property may have incurred substantial damage at least once in their loss histories. Further analysis showed that these properties "experienced approximately the same number of losses – and accumulated even greater flood insurance payments – after being substantially damaged as they experienced before being substantially damaged," indicating that the structures had not been brought to post-FIRM standards as required.

In 1999, FEMA's Inspector General (FEMA Inspector General 1999) used NFIP claims data to identify 603 structures as being substantially damaged, while the communities identified only 106 of those structures as being substantially damaged (a difference of 82 percent). It is important to note that, although NFIP claims data can help identify *potentially* substantially

damaged buildings, they use slightly different calculation methods than communities are instructed to use and therefore may inaccurately identify some structures as being substantially damaged. This is addressed in greater detail later in the report. To determine whether obvious mitigation occurred, the Inspector General took pictures of 87 of the 603 structures. When compared to pictures taken by claims adjusters, the Inspector General's pictures revealed that 87 percent of the structures sampled were not elevated when they were rebuilt. They also found that of a sample of 43 structures that were declared substantially damaged by communities, only 11 were reclassified as post-FIRM and re-rated with actuarial rates.

FEMA has recognized that its substantial damage and substantial improvement requirements are not always thoroughly implemented. In 1991 FEMA convened a workshop to "review the extent and causes of why substantially damaged buildings were not being brought up to post-FIRM standards" (ISO and French & Associates 1992). One major conclusion was that "the NFIP is faced with a large percentage of substantially damaged buildings that are not rebuilt to post-FIRM standards nor are they re-rated as post-FIRM buildings." Furthermore, in interviews with the study team, FEMA regional officials and state floodplain management staff identified failure to declare structures substantially damaged or substantially improved and failure to bring declared structures to post-FIRM standards as common forms of noncompliance in communities. Some described substantial damage and improvement as "the biggest challenge for the NFIP and the region," "the number one compliance problem," or "the biggest failure of the compliance process." One FEMA program specialist said substantial damage and improvement is an issue that "drives the region crazy."

In summary, FEMA and outside evaluators are in agreement that the substantial damage and substantial improvement provisions are not being implemented to the degree that FEMA had intended. Even so, the substantial damage/improvement requirement remains the main driver for post-flood mitigation, and FEMA has devoted considerable resources to efforts to improve its implementation. It is therefore important to identify ways to remedy the situation.

The study team found that shortcomings in implementation of the substantial damage and improvement rule are usually the result of one or more of the following factors: reluctance to make proper declarations, confusion about or ignorance of the rule, problematic timing, varying methods of calculating "substantial," and lack of information about damaged structures. These factors often combine to make implementation of the rules especially problematic.

Reluctance to make Proper Declarations

Floodplain management staff at FEMA, the states, and various regional floodplain management organizations frequently pointed to the reluctance of community officials to declare substantial damage and substantial improvement. Local floodplain managers may avoid declaring structures substantially damaged or improved out of consideration for the perceived hardships of community members. A declaration of substantial damage or improvement will often add significant expense to the repair or improvement of the structure. Participants in the 1991 Substantial Damage Workshop found "the most important reason why heavily damaged buildings are not rebuilt protected from flood damage is because most owners do not have the funds needed to meet the regulatory requirement" (ISO and French & Associates 1992). Thus, many participating communities are hesitant to declare a property substantially damaged until funding from some source is secured to enable the property owner to make necessary

modifications. As one FEMA program specialist said, local officials are themselves local and it is difficult to make a neighbor comply with NFIP regulations like the costly improvements to the structure that will be required if it is declared substantially damaged.

The problem of economic hardship is compounded when the property owners are already economically disadvantaged. In response to the report *Audit of the Effectiveness of the Substantial Damage Rule* (FEMA Inspector General 1999), a regional director wrote, “A community cannot be expected to condemn low value structures [*in this case by declaring the structure substantially damaged*] without providing alternative housing for the families affected.”⁴³ It is politically and emotionally difficult for officials to require community members who have already suffered because of the extensive damage to their structures to take on the added cost of bringing their homes to post-FIRM building standards.

Floodplain managers sometimes face political pressure not to declare structures substantially damaged or improved. Several FEMA program specialists told the study team that sometimes a local floodplain manager fails to declare or enforce the rules because the mayor overrides his authority or more generally because of “political ramifications.” Such political pressure can lead to a reluctance to make declarations or enforce compliance during reconstruction out of fear of negative repercussions. It can also affect the resources provided to local staff to make the declarations and monitor reconstruction.

The result of these types of reluctance is that the local official tends to give the property owner the benefit of the doubt when making a determination of whether the damage has been “substantial.” When the percentage is close to the 50 percent threshold, the local government’s tendency is to lean toward the lower number, freeing the property owner of the costly mitigation requirement.

Timing Problematic

Communities are often faced with the challenge of declaring structures substantially damaged after a flood—a confusing time during which emotions run high. Problems that already affect implementation of the rules, such as confusion and politics, are more acute in this environment. For example, in response to a report that noted inadequate implementation of the substantial damage rule (FEMA Inspector General 1999), a representative of a FEMA regional office described a post-flood situation in which three communities’ building inspectors were responsible for making substantial damage declarations for their communities. The regional office staff member described the staff as “overwhelmed by the workload in the post-disaster environment.” Despite this difficulty, declarations must be made quickly so that permits can be issued and property owners begin reconstruction. Delays or perceived delays in receiving the go-ahead to begin rebuilding contribute to property owners’ dissatisfaction, confusion, and resistance to further requirements. Many floodplain management staff at the regional and state level said that the speed with which FEMA provides relief and recovery funds after a disaster sometimes makes enforcement of the substantial damage rule more difficult. One state floodplain coordinator told the study team that “communities receive contradictory signals” when FEMA

⁴³ He was referring to a situation that followed a massive flood in which families in substantially damaged, low-value structures were allowed to repair their homes without bringing them to post-FIRM building standards. In this particular case, FEMA planned to buy out the affected structures in the future and took that into consideration in its decision to excuse the families from the substantial damage requirements.

provides funding to repair damaged structures before the community identifies which structures must be brought to post-FIRM standards during that repair process.

It is even more difficult to enforce the substantial damage rule when the disaster is something other than flooding (e.g., wildfires). In these situations, all of the problems of the post-disaster environment apply, but floodplain management staff must make a special effort to remind community members of the continued importance of compliance with floodplain management regulations.

Although only the community has the authority to make declarations of substantial damage and substantial improvement, outside experts (such as building officials from other communities, civil engineers, and consultants) can provide support and help make calculations.

Regional office staff agree that the presence of outside support is a key element in ensuring compliance with the substantial damage rule. One FEMA program specialist said “Our experience has been that it would be difficult to expect a jurisdiction to completely take over the operation [after a large flood] and expect quick, accurate determinations to result.” Another FEMA program specialist remarked that the only way to ensure that communities enforce the rule is to have outside floodplain management staff coordinating the declaration process.

The study team was told by FEMA regional office and state floodplain management staff that they often make a point of being present to help communities after a disaster if they expect the communities to have a large number of substantially damaged structures. One state official said he has taken photographs and written down details of specific properties after floods for follow-up work with local officials. Many staff said that, when possible, they arrange for outside contractors, such as the U.S. Army Corps of Engineers, to either assist communities in making declarations, or to do other work that frees up local staff to make declarations.

FEMA has also recommended that communities establish a mutual aid agreement with building permit officials and similar professionals from other participating communities. When a disaster occurs in one community in the group, all of the communities in the group respond. Communities that enter into cooperative agreements have the opportunity to practice making substantial damage declarations in other communities and thus are more experienced when a disaster hits their own community. Also, the community suffering the disaster benefits from the presence of additional help to lessen the workload on their own staff. It is critical that communities involved in such agreements understand how to properly declare substantial damage since any incorrect assumptions made by one community may be communicated to the others in the group.

Misunderstanding of the Substantial Damage/Substantial Improvement Rules

In *National Flood Programs in Review 2000* (ASFPM 2000), the ASFPM indicated that one reason communities fail to declare structures substantially damaged or improved is confusion about how to perform the calculation. In interviews, FEMA and state floodplain management staff sometimes described the rules as confusing or difficult for the communities to understand and stated that communities do not understand what they must do to comply with them. Substantial damage and substantial improvement occur only infrequently in most communities, so floodplain management staff are often inexperienced at making such declarations.

FEMA program specialists said that although communities are usually aware of the rules they do not understand how to make the calculations to declare substantial damage or substantial improvement. Communities can usually identify structures that are less than 40 percent or more than 60 percent damaged or improved, but structures with damage or improvement ratios at or around 50 percent cause considerable problems.

A survey of federal, state, and local floodplain management officials on training found that all three groups desired additional training on enforcing the substantial damage/improvement provisions. In particular, many local officials indicated that they lack the training to estimate substantial damage and to understand the substantial improvement provision. FEMA's course on floodplain management (Managing Floodplain Development through the NFIP) provides guidance on the substantial damage and substantial improvement provisions. In addition to definitions, regulations, and illustrations, the course allows students to practice calculating repair and improvement costs and market value. Many states and regional office staff in every region deliver training to communities on calculating and declaring substantial damage, when possible, usually after a disaster.⁴⁴ Federal and state officials suggested that FEMA's Emergency Management Institute (EMI) develop more advanced courses on topics like substantial damage and substantial improvement.

In 1998, FEMA released the first version of the Residential Substantial Damage Estimator (RSDE), a software package designed to help state and local officials estimate a structure's value and damage costs. FEMA recommends that state and local officials use the software in conjunction with an industry-accepted guide on estimating residential costs. Some of FEMA's training materials on the provisions now include an explanation of RSDE and its advantages when used by participating communities. For example, the study team obtained a copy of a presentation developed by FEMA Region V, which explains how to use RSDE after a flood. The presentation provides samples of worksheets used by participating communities to collect data on substantially damaged structures for later input into RSDE. Federal and state officials identified a need to provide participating communities training on RSDE.

Differing Methods for Calculating Substantial Damage

FEMA guidelines give communities multiple options for calculating the costs of both the original market value⁴⁵ of the structure and the cost of the damage or repair. Methods for determining a structure's market value include independent appraisals by a professional appraiser; detailed estimates of a structure's actual cash value; and "qualified estimates" based on sound professional judgment by staff of local building department or local or state tax assessor's office. FEMA allows communities two additional less-precise options to use for those structures with damage or improvements that are clearly above or below 50 percent: property appraisals used for tax assessments (adjusted assessed value); and the value of a structure reported in NFIP claims data. Methods for estimating the cost of damage or repair include

⁴⁴ Although representatives of all of the FEMA regional offices and several states told AIR that they provide some sort of training in substantial damage and substantial improvement, the level and amount of training available vary considerably by state and region. Several regions provide training in substantial damage calculations either only in the post-disaster environment or at workshops independent of a disaster. Other states and regions provide training only in one-on-one meetings with communities that have experienced a recent disaster.

⁴⁵ Although insurance adjusters use replacement cost in their post-disaster calculations, FEMA does not consider replacement cost to be an acceptable substitute for market value.

itemized estimates made by licensed contractors or other professional estimators in the construction industry; monetary damage estimated by an NFIP claims adjuster (for insured structures only); “qualified estimates” from local building permit department using professional judgment and knowledge of regional and local construction costs; valuation tables published by the major building code groups; and assessments conducted during field surveys of post-flood damage by state or local officials.)⁴⁶

By choosing certain calculation methods over others, owners of structures that are damaged (or improved) in the range of 40 to 60 percent can manipulate calculations to show that their structures were not substantially damaged or improved. FEMA’s report on the 1991 substantial damage workshop said:

Both building damage and building value figures can be manipulated depending on the needs and desires of the actor. [Building damage is sometimes measured as total damage sustained or as only the cost of the repairs that are actually made or reported to the permit official. Often repairs do not replace everything with like quality, use free labor, etc. . . . Different estimators, adjusters and appraisers can produce and defend different numbers](ISO and French & Associates 1992, p. 7).

FEMA program specialists and state floodplain management staff said that property owners or floodplain management staff often avoid declaring substantial damage or improvement by calculating damage or improvement to be only 48 to 49 percent of the value of the structure. One community certified that all of its structures damaged by Hurricane Floyd were no more than 49 percent damaged.

The study team concluded that the wide range of calculation methods currently available has contributed to inadequate implementation of the rules by confusing communities and facilitating abuse. This has led to a high number of calculations of damage and improvement in the high 40 percent range.

Some states and communities have adopted a “cumulative” method of calculating substantial damage or improvement. With a cumulative qualifier provision, the community agrees to track damage or improvements to properties over a given period of time (sometimes five or 10 years) or the life of the property. When the total cumulative value of all improvements or damage within that time period exceeds 50 percent of a structure’s market value, the structure is then required to meet the NFIP’s minimum requirements. To use a lower threshold, a community may require a structure to be brought to post-FIRM standards when it suffers damage or is improved to a point greater than or equal to 25 percent (for example) of pre-damage market value. Both the cumulative qualifier and the lower threshold provisions have the effect of requiring more structures to comply with the NFIP’s minimum requirements as a result of improvements or repairs made following a disaster.

⁴⁶ A further complication is that some property owners use “donated” labor or materials to make improvements or repairs and fail to include these costs in their calculations. Compliance with FEMA requirements demands that the community estimate the value of all donated labor or materials and include the estimated value in calculations of improvement.

FEMA has typically rejected recommendations to redefine substantial improvement to include the cumulative tracking of building permits because of the burden it would place on communities who do not have the sophisticated recordkeeping capacity or expertise required to track a cumulative requirement. FEMA has encouraged, but not required, participating communities to adopt more stringent standards and has recognized the precedence of such standards over the NFIP's minimum requirements.

For example, encouragement is provided to communities participating in the Community Rating System, who can earn credit points for adopting a cumulative qualifier provision for substantial damage or substantial improvement or for adopting a threshold for substantial damage or substantial improvement that is lower than the 50 percent threshold mandated by the NFIP. As of May 1, 2003, 260 CRS communities (27 percent) were earning points for cumulatively counting improvements or repairs made to a structure and 32 CRS communities (3 percent) were earning points for enforcing a lower substantial-improvement threshold.

Claims Data not Used

When claims adjusters survey a post-disaster situation and suspect that a structure may have incurred substantial damage, FEMA requests that they complete an "Adjuster Preliminary Damage Assessment" form. The form identifies *potentially* substantially damaged structures by recording a structure's probable repair cost, replacement cost, and actual cash value.⁴⁷ Both WYO companies and the NFIP Servicing Agent (National Con-Serv, Inc.) use the forms. A completed form is sent to the NFIP's Bureau and Statistical Agent (the Bureau) which then makes the data collected on the form available to FEMA's regional offices on its website, FIANet (also known as BureauNet). Finally, the regional offices distribute the information to the appropriate local officials for their use in determining substantially damaged structures.

Although insurance claims data submitted in Preliminary Damage Assessment Forms cannot be used as a substitute for calculations made by the community, such data can help the community to identify the structures that suffered damage in the range of 50 percent. As ISO reported after the 1991 Substantial Damage Workshop (ISO and French & Associates 1992), "While damage totals can be misleading, the details of what was damaged and their total repair or replacement costs are dependable. There is a wealth of data in the claims files that can be very helpful for FEMA's floodplain management purposes."

Although FEMA agrees that the data are useful tools for communities, the process of communicating the data to the communities is not streamlined and often breaks down in implementation. Evidence suggests that a lack of communication between the actors (claims adjusters, the Bureau, FEMA, the states, and the communities) prevents local staff from using these data to help them make substantial damage declarations. In response to the Inspector General's report, a representative of one regional office described the lack of communication of claims data after a 1996 flood: "Throughout the disaster, the affected communities requested FEMA to provide notice of properties for which substantial damage claims were filed or rewarded. However, DFO [Disaster Field Office] staff did not receive more than a handful of Substantial Damage Claim Forms either from the NFIP or WYO [Write Your Own insurance]

⁴⁷ Although calculating substantial damage or substantial improvement requires a structure's market value, the form asks for a structure's replacement cost because calculating market value can vary by location.

companies.” He added that the other forms had been sent to the Flood Response Office for the disaster, but that a lack of communication prevented staff in the communities from ever receiving that data. The regional office representative added that the region believes that the process has greatly improved since 1996.

Since 1996, the process of communicating claims data to the regions has been improved by providing the information on the Bureau’s website, FIANet, rather than relying on sharing paper records of claims data. However, interviews conducted in 2003 and 2004 suggest that many floodplain management staff at FEMA and the states remain frustrated by the implementation of the process. The study team asked FEMA program specialists at eight regional offices how they received information on potentially substantially damaged structures in participating communities. Although some FEMA program specialists mentioned using FIANet to access data from the preliminary damage assessment forms, several indicated that they do not know how to get such claims data or do not know how to use the data. One FEMA program specialist did not know it was his responsibility to check FIANet for data, but expected to receive hard copies of claims data. However, FEMA told the study team that the Bureau no longer provides hard copies. Other FEMA program specialists told the study team that there is no adequate way to provide local officials with damage estimates or that the region cannot share claims data with communities because of privacy concerns. Several state floodplain management staff in multiple regions told the study team that they and/or the communities in their states do not receive claims data to aid in substantial damage declarations after a disaster, although such information would be useful.

Regional offices are the link between the Bureau and participating communities with regard to communicating information on potentially substantially damaged structures. If regional offices do not understand their role in the process, then participating communities lack a tool that would prove useful in their enforcement of the substantial damage provision.

The agency that brings the claims data to the community, whether it be FEMA or the state, should make sure that the community understands the limitations of the data. Managing Floodplain Development through the NFIP notes that insurance claims data should only be used as a screening tool for identifying potentially substantially damaged buildings. Although this information is readily available to communities, it may be overlooked or not understood, and staff in many communities have not received the training. Since FEMA, or another floodplain management agency, must deliver the data to the community, they have the opportunity to discuss the limitations of the data with community staff at that time. FEMA should stress this responsibility when it discusses the issue with the regional offices.

7.1.2 Longstanding Problems in Implementing Substantial Damage Rules

Participants in FEMA’s 1991 substantial damage workshop (ISO and French & Associates 1992) recommended that FEMA

- Change the definition so that all actors go by the same rules;
- Provide financial assistance to policyholders for mitigation projects;
- Provide more guidance documents and training to local officials and monitor their work;

- Provide intensive assistance and additional staff to permit officials after a flood; and
- Support this effort through the process of adjusting claims and by re-rating substantially damaged structures after a review by a local official.

The National Wildlife Federation (National Wildlife Federation 1998) recommended more vigorous enforcement of the substantial damage provision. In addition, the National Wildlife Federation recommended that FEMA and Congress include a cumulative threshold for substantial damage and allow FEMA to determine substantial damage, when necessary.

In 1999, FEMA's Inspector General recommended that FEMA

- Establish processes to ensure communities, FEMA officials, and policyholders promptly receive data on insurance claims that will help them in identifying potentially substantially damaged structures;
- Require communities to use the most objective sources to estimate costs when calculating substantial damage; and
- Consistently manage and monitor local enforcement of the substantial damage provision.
- The Inspector General further commented on FEMA's delay in making the decisions to improve the provision's effectiveness despite the agency's long-standing knowledge of enforcement problems.

In 1998, FEMA solicited opinions from the NFIP's partners and customers on all facets of the program. Respondents raised several issues related to substantial damage and substantial improvement including, but not limited to, using a structure's replacement cost (instead of market value) when determining substantial damage, implementing a cumulative qualifier provision to the definition of substantial improvement, improving the time in which state and local officials receive information on insurance claims, and providing more training on evaluating and calculating substantial improvements and substantial damage.

Finally, in a review of national flood programs, the ASFPM recommended strengthening the substantial damage and substantial improvement provisions in two ways: (1) by redefining substantial improvement to include a provision that treats improvements on a cumulative basis, and (2) by developing a clear position on whether to use replacement cost or market value when making determinations of substantial damage or substantial improvement. In general, the ASFPM has found that replacement cost is a better standard in coastal areas, while market value works better in riverine locales (ASFPM 2000).

Either through anecdotes or through formal channels, such as the reports and studies previously described, FEMA has known for several years of the problems hindering enforcement of the substantial damage and substantial improvement rules. FEMA has made several changes to improve implementation, including creating a definition for substantial damage in 1989, issuing written guidance such as *Answers to Questions About Substantially Damaged Buildings*, instituting Increased Cost of Compliance (ICC) coverage as part of the National Flood Insurance

Reform Act of 1994, developing the Residential Substantial Damage Estimator (RSDE) software, and including activities such as adoption of a cumulative qualifier and lower threshold for substantial damage and substantial improvement in the CRS. Ways to resolve other issues, like using replacement cost rather than market value when determining a structure's value, are being examined by FEMA.

Despite these and other changes, there are still shortcomings in the implementation of the substantial damage and substantial improvement rules. Lack of understanding of the rules persists because training and guidance have not reached all communities. Many communities are reluctant to enforce the rules because they face political pressure or feel that enforcement of the rules is a hardship on property owners. Such pressures can be lessened by the provision of mitigation funding or payments under the Increased Cost of Compliance provisions of flood insurance policies, which have been used more frequently in the last several years (see the discussion in Section 4.4.3). Issues such as timing and the variety of ways substantial damage and substantial improvement can be calculated often further impede declaration and mitigation.

7.1.3 Recommendations on Substantial Damage/Improvement

Enforcement of the substantial damage/improvement provision of the local floodplain management ordinance is the community's responsibility but it does not always take place effectively. Even though they are unevenly implemented, the substantial damage/improvement requirements are the main driver for mitigation after a flood. FEMA can improve compliance with substantial damage and substantial improvement by providing more support and data to communities and promoting funding for mitigation.

Promote awareness of the ICC coverage. Knowing that these funds will be available to insured property owners to help alleviate the cost of bringing their building up to NFIP standards should help relieve the hesitation of local officials to declare such structures substantially damaged. Floodplain management staff should increase their efforts to provide information to community members after a flood detailing who is eligible to make a claim on their ICC coverage, how to make a claim, and the purposes for which money received from an ICC claim payment can be used.

Provide more training and guidance on substantial damage/improvement to local staff. This training can be delivered through EMI, the regional offices, or the states.

Provide communities with the Residential Substantial Damage Estimator software and train them to use it. Wider use of this software can improve compliant implementation of the substantial damage rule. Federal and state officials have identified the benefits of RSDE training and technical assistance.

After a flood, provide and/or encourage support for local determinations of substantial damage with staff from FEMA, states, outside experts, and cooperative agreements. This can compensate for lack of knowledge on the part of local floodplain management staff and can make declarations politically easier for them.

Continue to encourage communities to adopt a cumulative qualifier provision or a lower threshold for substantial damage. Although it can be difficult to track and calculate, in communities that do choose to administer a cumulative threshold for substantial damage

do more to minimize future flood damage. Lower and/or cumulative thresholds can hasten the conversion of pre-FIRM construction into flood-resistant status nationwide.

Clarify the procedures for sharing lists of potentially substantially damaged structures. FEMA regional offices can help communities make substantial damage declarations by more readily sharing insurance claims data after a flood. FEMA should send the regional offices a memo clarifying their role in collecting and distributing this data. Regional office and state personnel working with community officials should be sure that the local staff understands the limitations of the claims data.

Visit communities during non-flood disaster recovery to ensure compliance. The importance of compliance with floodplain management requirements as rebuilding takes place is often not evident to a community after a tornado, earthquake, or fire. It is therefore imperative that FEMA, the state, or another floodplain management organization be present and just as visible in the community after non-flood disasters as they are after floods.

Address problems caused by the variety in methods for calculating substantial damage/improvement. FEMA already is working with experts and interested parties to revise and clarify what methods communities should use to calculate substantial damage and substantial improvement. They should choose a limited number of methods to narrow the breadth of damage figure calculations.

7.2 Variances

The effectiveness of the NFIP in protecting property from flood damage can be undermined if too many exceptions to the building and development criteria are allowed. For that reason, the extent to which communities grant variances was investigated for this evaluation.

Communities may grant variances at their own discretion, but the NFIP regulations provide guidelines for the specific circumstances in which a community is allowed to issue a variance from the floodplain requirements (for example, to allow a structure to be built below BFE). These exceptions are granted as a result of formal application by the property owner and a community's formal review of the application. In brief, they require that the applicant demonstrate that exceptional hardship would result if the variance was not granted and that no increased flood heights or safety threats would result. Further, any variance granted must allow only the minimum deviation from the local ordinance possible to afford relief (see 44 *CFR* 60.6). Such variances are for floodplain management purposes only; insurance premiums are not modified by the issuance of a variance and remain commensurate with the height of the structure in relation to BFE. Communities are required to retain record of all floodplain-related variances issued.

Communities are required to report all variances issued on their NFIP biennial reports, and FEMA can review the justification for the variances a community grants. A pattern of granting variances that are inconsistent with NFIP requirements is a deficiency in a community's program and makes it subject to sanctions.

FEMA policy documents state that flood-related variances should be rare because, except for historic structures, there are few cases in which all of the variance criteria are met. The variance criteria developed by FEMA are intentionally stringent to limit variances to only those

unique cases where physical constraints of the property itself make compliance with NFIP building standards extremely difficult, if not impossible. However, if a large number of communities were issuing a large number of variances—even variances that meet the NFIP criteria—that could indicate potential noncompliance with the intent of the NFIP regulations, if not the letter.

The study team reviewed the number of variances reported in biennial reports throughout the 1990s and early 2000s, as well as community records such as variance hearings and variance records to determine the extent to which communities grant variances to their floodplain management regulations and whether FEMA’s variance criteria are met in those cases. The study team also assessed FEMA regional office staff’s understanding of FEMA’s variance criteria and the degree to which FEMA and the states monitor communities for compliance with NFIP regulations regarding variances.

7.2.1 Number of Variances Granted

Biennial report data for two years (1995 and 1997) showed that less than 3 percent of all participating communities reported granting variances for development in the floodplain during the previous year. When these figures are adjusted to reflect the response rate for communities submitting biennial reports, the percentage of communities that granted variances is still less than 4 percent.

The data did indicate, however, that a few communities may be overusing variances. According to biennial report data for 1997 and 2001/2002, communities that granted variances issued an average of three per community. Of the communities that reported granting variances, 5 percent granted 10 or more variances per community (and among those 5 percent, the average was 20 variances per community). The study team also found that some communities that grant variances grant variances for the majority of, if not all, structures built or improved. Data for 1997 and for 2003 show that 267 communities granted variances for 100 percent of the permits that they issued⁴⁸ (FEMA 1997; Mathis and Nicholson 2006).

A large number of variances does not necessarily indicate noncompliance in a community, and it is not possible to determine from biennial report data whether the variances were granted in accordance with NFIP guidelines. However, several FEMA program specialists told the study team that such an indication would warrant further investigation and possibly a community visit, especially if variances accounted for a large percentage of the permitted structures. Table 8 identifies the 20 participating communities whose biennial reports between 1991 and 2003 showed the largest number of variances. In a little over half of these communities, the variances were not only large in absolute numbers, but also constituted a large percentage of the permits issued that year.

TABLE 8: Communities That Granted the Most Variances, 1991 to 2003

Community	Year	Number of Variances Granted	Variances as a Percentage of Permits Granted
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⁴⁸ These figures may underrepresent the number of communities granting variances, because all the 2003 biennial reports had not been collected from communities at the time data were gathered.

Tampa, FL	1995	120	39
Puerto Rico	1997	68	72
Miami Dade County, FL	1993	65	1
Poquoson, VA	1993	55	8
Dearborn Heights, MI	1995	50	2
Puerto Rico	2003	50	56
Lafourche Parish, LA	1997	43	4
Marietta, OH	1995	42	48
St. Charles Parish, LA	1995	41	9
Winthrop, MA	2003	40	13
Floyd County, KY	1995	39	93
Marietta, OH	1997	38	44
Stoughton, MA	1995	37	86
Charleston, SC	1997	36	5
Fairhaven, MA	1995	36	100
Kittitas County, WA	1997	35	100
St. Petersburg, FL	1993	35	15
Fremont County, CO	1993	34	100
Delcambre, LA	1997	32	40
St. Charles Parish, LA	1993	30	5

Note: Communities may appear more than once for different years

7.2.2. Compliance of Variances Granted

Data indicating whether the variances granted by communities meet the NFIP criteria are not readily available. Through interviews with FEMA staff and state and local floodplain management officials and review of FEMA correspondence and local variance records, the study team found that some communities grant variances that are not compliant with NFIP variance criteria. Likewise FEMA and state floodplain management staff gave examples of communities that had granted inappropriate variances, sometimes over the objections of FEMA or the state. However, no evidence was found that such noncompliance was widespread. Rather, it seems to be concentrated in a relatively small group of communities.

Post-Construction Variances

Post-construction (retroactive) variances are not discussed in FEMA guidance or NFIP regulations. This has led to an inconsistent interpretation of communities' use of post-construction variances to remedy violations, as required under the compliance guidelines.

A representative of FEMA headquarters said that FEMA strongly discourages communities from issuing post-construction variances when communities discover violations because once the variance is granted, the communities lose their ability to initiate legal action against the property owner. Furthermore, it would be highly unlikely that such post-construction variances would meet the criteria for a variance because the hardship would most likely be financial (the expense of elevating an already-built structure).

However, several FEMA program specialists and state floodplain coordinators (and one community) said that communities can issue variances to address noncompliant structures retroactively, i.e., a building that is found to be in violation can simply be issued a variance to exempt it from the applicable regulation. The example was given of granting a post-construction variance if a built structure were discovered to be one-quarter inch or several inches below BFE (in other words, a minor violation likely the result of measurement error). One state floodplain

coordinator said that a post-construction variance should be granted if the noncompliant structure were the result of “an honest mistake.” A FEMA program specialist in one region recommends during community training that noncompliant communities use variances to bring about partial compliance in noncompliant (improperly elevated) structures, but attaching conditions (for example, the property owner receives a variance for the improperly elevated structure, but must elevate the utilities).

Clarification of the official position on post-construction variances is needed.

7.2.3 Reasons for Noncompliant Variances

There are three main reasons for communities’ granting noncompliant variances: unfamiliarity with the NFIP and its purpose; confusion about or ignorance of NFIP variance criteria; and deliberate disregard for the NFIP variance criteria.

Unfamiliarity with the NFIP

Compliant application of NFIP variance criteria is typically not in the hands of the local floodplain manager, but instead is dependent on the actions of an elected or appointed board, often called a Board of Appeals, which is responsible for hearing applications for variances from all types of zoning requirements, not just those related to floodplain management. Not only are these boards often unfamiliar with the NFIP, but also they are accustomed to applying the community zoning criteria to other types of zoning variances and may be inclined to apply those same standards to floodplain management variances. A lack of understanding of the reasons for floodplain management regulations can lead board members to underestimate the importance of complying with those regulations, sometimes leading to a deliberate disregard for NFIP variance criteria. Finally, board members are typically elected or appointed members of the community and may be affected by politics when they make decisions on variances. Therefore, when the interests of the NFIP compete with the perceived interests of the variance applicant, boards may sometimes disregard NFIP variance criteria in their deliberations.

It is the responsibility of a community floodplain manager to represent the interests of the NFIP before the board at variance hearings. The floodplain manager can recommend that the board approve variances that are consistent with NFIP criteria and deny variances that are not, but the final decision whether to grant the variance lies with the board. Indeed, the study team found several examples of boards’ granting variances over the objections of the local floodplain manager. FEMA and state floodplain management staff can choose to provide written opinions to the board or testify in support of or in opposition to grant of variance. As an authority outside of the community, FEMA or state floodplain management staff may have more influence than would a community floodplain manager and may be able to explain NFIP regulations and the reasons for them better than a local floodplain manager. Also, the presence of FEMA or the state can lessen the political pressure that a local floodplain manager or a board faces by making it clear that the community is required to comply with NFIP regulations or else risk sanctioning by FEMA.

One community told the study team that it separated floodplain variances from other types of variances. While the community’s Board of Appeals hears requests for variances not related to floodplain management, only the city construction department has the authority to

grant floodplain variances. This separation of variance authority may be useful in other communities.

Misunderstanding about Variance Criteria

Although the majority of floodplain management staff at the community, state, and FEMA regional office level generally understand NFIP variance criteria, interviews showed that some staff are confused about certain issues.

The most prevalent source of confusion regarding NFIP variance criteria is what constitutes “hardship” sufficient to warrant a grant of a variance. Although FEMA does not strictly define “hardship” in regulations or guidance, it does give many examples of what are not considered hardships. FEMA variance criteria, as written in the *Code of Federal Regulations* and translated into compliant community ordinances, makes clear that variances should not be granted for economic reasons. Also, FEMA guidance documents specifically reiterate that the physical disability of an applicant is not a justifiable reason to grant a NFIP variance.

A review of the minutes from several variance hearings, however, shows that communities often accept economic hardship (i.e., the expense of complying with the ordinance) as an acceptable reason for granting variance. This confusion was present in some of the communities interviewed for this study. For example, one community told the study team that a property owner could prove hardship by showing that elevating the structure would be expensive.

One FEMA program specialist told the study team that although it is not appropriate for communities to grant variances because of a physical disability of an applicant, such situations “always get the variance” anyway because they are “tearjerkers.” Sometimes even the FEMA and state staff responsible for monitoring and training communities were unaware of certain NFIP variance requirements. For example, several FEMA program specialists and one state floodplain coordinator said that variances granted because of physical disability are acceptable to FEMA. The state floodplain coordinator told the study team that the *only* legitimate reasons for communities to grant variances are for historical structures and physically disabled owners. One FEMA program specialist told the study team that his predecessor had told communities that physical disability was an acceptable justification for granting variance. The current FEMA program specialist has been working with communities to resolve the confusion that resulted.

Deliberate Disregard for NFIP Variance Standards

Some communities allow structures to be built without meeting NFIP standards without granting a variance at all. The study team found examples of building permits on file in communities showing structures built below BFE or without the vents required by the NFIP. The community floodplain managers approved these permits despite the fact that the structures built to the permits’ specifications would be noncompliant. In a similar vein, one community avoided the variance process by granting “waivers” approving noncompliant construction in place of official variances. Because they avoided the variance process entirely, the communities did not have to report these noncompliant structures in their biennial reports to FEMA, making the violations more difficult for FEMA to detect.

7.2.3 Monitoring Variances

Because communities report variances in biennial reports, it is easy for FEMA to identify communities that grant a large number of variances (provided that the community properly reports the variances). Monitoring of biennial reports allows FEMA to ensure that communities do not make a practice of granting inappropriate variances. In interviews, some FEMA program specialists said they did not check variances in the biennial reports. One senior staff at a regional office mentioned never having found a community in the region with a large number of variances compared to the number of structures. However, a review of recent biennial report data by the study team indicated that there are several such communities in the region.

If biennial reports are checked (through the CIS or otherwise) to see what communities are issuing a large number of variances, then FEMA can investigate those communities to determine whether they were issued according to NFIP guidelines. Steps can then be taken to provide additional technical assistance or, if needed, apply an additional layer of review (by the state or FEMA) of the variances applications the community receives. With FEMA's or the state's recommendation that the variance would not meet NFIP criteria on record, documentation will be in place that the community knew the variance would be noncompliant. There then would be grounds for sanctioning if a pattern of granting such variances develops.

7.2.4 Recommendations on Variances

Issue additional guidance on variances to regional offices and communities. The regulations provided in the *CFR* are clear overall, but are not detailed enough to function as guidance. Current guidance is piecemeal and there is no guidance for staff regarding post-construction (retroactive) variances.

FEMA drafted variance guidance in 1991, but never finalized or distributed it. Little work would be needed to update and issue the 1991 draft. This guidance document could be geared to the Boards of Appeal by containing background on the importance of the NFIP in addition to an explanation of NFIP variance criteria.

The guidance should emphasize the importance of monitoring variance report in the biennial reports, so that followup can be done if needed.

7.3. Compliance in CRS Communities

The Community Rating System (CRS), initiated in 1990, is a program within the NFIP that encourages communities to perform floodplain management activities that exceed the NFIP's minimum requirements by rewarding their residents with discounted flood insurance. Any community participating in the NFIP may join the CRS, provided that community is in full compliance with the NFIP's minimum requirements and that it performs a minimum number of additional floodplain management activities.

All CRS communities are required to maintain programs that are compliant with the NFIP standards. Beyond this prerequisite, however, the 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. Confidence in both the NFIP and the integrity of the CRS can be undermined by a perception that standards of compliance are not uniformly applied.

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.

Finally, as of October 1, 2004, there were 1006 communities in the CRS. Although the 1006 CRS communities represent only 5 percent of all NFIP communities, they account for over 66 percent of all flood insurance policyholders (FEMA 2004). Thus their performance can have a significant impact on the actuarial soundness of the NFIP and the Flood Insurance Fund.

For these reasons, the study team paid particular attention to an analysis of compliance in CRS communities.

7.3.1 Background on the CRS

FEMA joined with the Insurance Services Office, Inc. (ISO) to develop and manage the CRS.⁴⁹ Together, FEMA and the ISO developed a catalog of specific activities that communities in the CRS can undertake to improve floodplain management. There are 18 activities in four main categories: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness. Each activity is assigned a point value (or a range of available points) that communities receive if they implement the activity on a continuous basis (see Appendix G for a list of creditable activities). The number of points a community earns determines the community’s “class” and accompanying flood insurance discount. Classes range from 9 (lowest) to 1 (highest). For example, a community that earns 1000 points is a Class 8 community, and its residents receive a 10 percent discount on their flood insurance premiums; 1500 points entitles the community to Class 7, etc.. The highest level, Class 1, receives a 45 percent discount.⁵⁰ Over half of all CRS communities are Class 8 or better. By rewarding communities for undertaking specific activities that FEMA has determined improve floodplain management, FEMA promotes compliance by providing an incentive for communities to exceed the NFIP’s minimum requirements and further reduce risk.

After a community joins the CRS, it can move up in class (called an “upgrade”) with increased floodplain management efforts, or it can be downgraded in class if it stops implementing some activities. Periodic “cycle verification visits” by ISO verify whether the community is meeting the requirements for an activity for which it receives CRS credit. If it is not, ISO will take those points away. This sometimes leads to a community’s being retrograded

⁴⁹ ISO has experience developing rating systems to classify insurance risk and developed similar rating systems for fire insurance (ISO’s Public Protect Classification Program) and building code effectiveness (ISO’s Building Code Effectiveness Grading Schedule).

⁵⁰ The policyholders within the SFHAs always receive the full discount. Policyholders outside of SFHAs also receive a discount, although it is sometimes less than the full percentage discount.

(assigned to a lower class). For example, a community may lose enough points that it must be retrograded from a Class 7 to a Class 8.

FEMA will 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). FEMA also will 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. The community loses all of the points that it had earned, and policyholders cease to receive policy premium discounts. A community that has been retrograded to Class 10 may reapply to the CRS when it can prove that it meets the minimum CRS requirements. A community that has been retrograded to Class 10 and still does not correct its program deficiencies or remedy its violations is subject to standard NFIP sanctions—probation and suspension.

7.3.2 Monitoring NFIP Compliance in CRS Communities

In theory, it should be easier to ensure the compliance of CRS communities with the minimum NFIP criteria than that of other communities because CRS communities are the subject of additional monitoring procedures. Further, the CRS monitoring is not the responsibility of overburdened FEMA and state staff but is assigned to ISO personnel. There are 16 field personnel (called ISO/CRS Specialists) to cover the 1,000 ISO communities. It is not their responsibility to assess the community's compliance with the NFIP standards but rather to provide assistance on and verification of the activities for which the community is receiving CRS credit. Nevertheless, the additional contact with the community, the checks of records that are conducted pursuant to CRS participation, and other assistance is doubtless of assistance in ensuring NFIP compliance as well.

There are four means by which CRS communities can be “monitored” and their compliance with the NFIP thus verified: (1) upon initial application to the CRS; (2) when an upgrade of CRS status is requested; (3) during periodic visits by ISO/CRS personnel; and (4) through customary NFIP monitoring. At each of these points different factors come into play along with opportunities for identifying and addressing any noncompliance. These monitoring opportunities vary in effectiveness, for varying reasons. The four steps for monitoring CRS communities, and their effectiveness, are discussed below.

Entry into the CRS

Before it may be considered for the CRS, a community must show that it is compliant with the NFIP's minimum requirements by obtaining a letter from its FEMA regional office verifying compliance and submitting it with its other CRS application materials. Before 1996, staff at the regional offices were allowed to choose whether a CAV was needed before the certification letter could be written. In 1996, FEMA began requiring that a CAV have been conducted no more than a year before the date of the letter verifying compliance, and the compliance letter be no more than 6 months old when the community applied to the CRS. According to FEMA, applicant communities “cannot be considered in full compliance if they have not had a recent CAV (within the past year)” (FEMA Inspector General 2002).

FEMA told the study team that it expects ISO to reject any applications that do not include a letter from the regional office indicating that a “clean” CAV has been conducted. If properly implemented, this policy should assure that communities are not allowed to enter the CRS without being compliant with the NFIP’s minimum requirements.

An official at FEMA headquarters said that, due to the length of the application process, it might have taken up to two years from the 1996 policy change to fully implement the requirement for a letter certifying a clean CAV. The study team therefore examined communities in two groups: (1) those that entered the CRS in 1996 and 1997 and (2) those that joined from 1998 through May 2004. The study team analyzed CAV records for CRS communities that entered the CRS between May 1996 and May 2004 to determine whether the regional offices and ISO were complying with this CAV requirement.

The study team found that the proportion of CRS communities that have a “recent, clean” CAV has risen since the 1996 requirement, but implementation of the requirement is not yet complete. Of the communities that entered the CRS from 1996 through 1998, 75 percent received a CAV. More recently, 98 percent of communities that joined the CRS between 1999 and May 2004 had received a CAV. This improvement shows that regions are focusing their efforts on ensuring compliance in communities that want to enter the CRS. However, at least six communities entered the CRS between 1999 and 2004 without a clean, recent CAV (table 9). Two of those communities have received a CAV since program entry. The other four had yet to receive a CAV as of October 2004. ISO approved these communities’ applications to enter the CRS despite the fact that the letters they supplied from their regional offices did not include reference to a recent CAV.

TABLE 9: Communities that Entered the CRS without a CAV, 1999-2004

Community	Date of CRS Entry
Marco Island, FL	October 2000
Rockville, SC	October 1998
Pawtucket, RI	October 2002
Upper St. Clair, PA	October 1998
West Carrollton, OH	May 2002
Yellowstone County, MT	May 2003
SOURCE: CIS and personal communications with FEMA regional officials (various dates)	

After examining many of the letters sent by the FEMA regional offices to certify compliance in communities applying to the CRS since the 1996 CAV requirement, the study team found that ISO accepted many types of letters to certify compliance. It was clear that some letters had been written by FEMA for the specific purpose of informing ISO of an applicant community's compliance. Such letters clearly stated that FEMA had determined the community was compliant by conducting a CAV on a given date and closing the CAV on a given date. However, other letters were clearly not written with the ISO in mind. It was difficult to tell from many of those letters whether a CAV had taken place, what the date of the CAV was, whether all compliance problems had been resolved, and whether the CAV had been closed.

Upgrade in CRS Status

When a CRS community thinks it conducts enough additional activities to warrant an upgrade in its classification in the CRS, it can ask ISO to conduct a verification visit. ISO notifies FEMA that the community is being considered for an upgrade and requests that FEMA notify ISO if the community is noncompliant. This is the second point at which noncompliance in CRS communities could be detected. It is FEMA policy that communities in the process of correcting violations should not benefit from an improvement in class, but that any pending upgrade "be held in abeyance until the compliance issues are resolved." However, the community is not required to submit a letter from the FEMA regional office certifying compliance and FEMA is not required to conduct a CAV to confirm that the community is compliant. If ISO is able to verify the points necessary for a CRS upgrade and does not hear from FEMA that the community is noncompliant, the community is approved for upgrade effective within six months.

Eleven CRS communities have been upgraded despite an open CAV in which a serious program deficiency was discovered. ISO upgraded eight of those communities before the CAV was closed. In one other community it is unclear whether the CAV was closed before upgrade. For example, Huntsville, Alabama, was upgraded to Class 7 in May 2003, months after a CAV in which the state found serious program deficiencies (failure to require no-rise certificates for development in the floodway and granting inappropriate variances). The CAV was closed five months after the community was upgraded to Class 7.

Some of the 11 communities never resolved their program deficiencies, although they continue to participate in the CRS at the upgraded class. Gulfport and Hernando County, Florida; Greenville, North Carolina; and Fairfield, California, have all been upgraded since FEMA or the state found serious program deficiencies during a CAV. Although the communities continue to participate in the CRS at an improved class (Hernando County, Greenville, and Fairfield are currently Class 8 and Gulfport is Class 7), these program deficiencies have yet to be resolved and the CAVs still remain open.⁵¹

One community, Huntington Beach, California, entered CRS as a Class 9 in October 1995, less than one year after a CAV in which serious problems were noted in both floodplain regulations and administration and enforcement procedures. A more recent CAV, in August 2003, noted serious problems in the "other" category. The notes for this CAV cite "numerous possible violations from construction during the 1980s and the early 1990s." The study team

⁵¹ FEMA headquarters and the regional offices confirmed the open status of these CAVs.

followed up with the region and confirmed that the community was allowed to remain in the CRS and receive premium discounts even though FEMA knew that numerous structures were in danger of sustaining flood damage if a base flood were to occur. The region said that enforcement action (such as CRS retrograde) against the community was not pursued because the community was working to correct those violations through a water diversion project. The project was recently completed, and the region believed that some structures remained non-compliant. Meanwhile, the community has been upgraded to a Class 7.

The region's decision not to recommend a CRS retrograde while the community worked on its water diversion project is consistent with FEMA's policy of not pursuing sanctions (i.e., probation and suspension) as long as a community is actively working to remedy its problems. Although it may be appropriate not to sanction a community while it is working to remedy its problems, it is debatable whether it is appropriate for a community to continue to remain in the CRS and receive discounted premiums for policyholders for almost 10 years and also have its rating upgraded, when it is known to be noncompliant.

Periodic Visits by ISO staff

If the community's initial application to the CRS is in order and it appears that its activities will earn enough points to qualify it, ISO will schedule a "verification visit" to the community—a third means by which NFIP noncompliance could be detected. A verification visit is essentially a field inspection during which a representative of ISO checks that the community meets the specific requirements for the CRS activities for which the community requested credit.

Thereafter, ISO conducts periodic visits to CRS communities to verify that they continue to meet the specific requirements of the CRS. During these "cycle visits," which take place every five years for communities in Classes 6–9 and every three years for communities in Class 5 or above, a representative of ISO conducts a field inspection to verify that the community meets the specific CRS requirements of the activities for which it receives credit.

This cycle verification visit does not include an inspection for compliance with the NFIP's minimum requirements. The assumption of the ISO is that a community applying to join the CRS or to be upgraded in class has already been checked by FEMA for compliance with the NFIP. However, during the cycle verification visits, ISO might happen to discover possible noncompliance. For example, an ISO representative might notice structures not elevated to BFE during his or her review of elevation certificates. ISO guidelines state that the ISO representative should contact the FEMA regional office and the state if it is suspected that a community may not be compliant with the NFIP's minimum requirements. ISO guidelines do not give a standardized procedure for this notification. A senior staff member at ISO told the study team that it may notify FEMA or the state in writing, by phone call, or send a picture of the structure in question.

Routine NFIP Monitoring for CRS Communities

CRS communities are subject to routine monitoring for compliance with the NFIP's minimum requirements by FEMA and its partners in the states, just as other NFIP communities are, through CACs, CAVs, and other tools. If any program deficiencies or violations are discovered, and the community does not remedy them within an acceptable time frame (within six months, according to FEMA guidance for CRS communities), FEMA is supposed to notify

ISO that the community is noncompliant with the NFIP's minimum requirements and should be retrograded directly to Class 10, that is, removed from the CRS.

In 2002, FEMA's Inspector General found that CAVs had been conducted in 66 percent of CRS communities nationwide. FEMA agreed that "conducting CAVs...for all CRS communities is necessary and appropriate," and said it would require that all CRS communities be covered by a CAV in the following three to five years. However, FEMA disagreed with the accuracy of the Inspector General's findings that CAV rates nationwide were as low as 66 percent. Since the Inspector General used only CIS data for its analysis, FEMA said the report possibly did not include a large number of CAV reports that may not have been entered into the CIS. The NFIP Evaluation study team therefore conducted additional research to determine the percentage of CRS communities that have received a CAV.⁵²

FEMA's CRS coordinator at headquarters agreed that the CRS application process could take up to two years from the time a community informs the regional office that it wishes to apply until the community is admitted into the CRS. Therefore, all CAVs that a community received up to two years before it entered the CRS until August 2004 were included in the analysis. Hence, a statement in this report that a CRS community has not received a CAV means that the community did not receive a CAV during the period beginning two years before the community entered the CRS until August 2004, when the data were analyzed.

The study team collected records from the CIS and calculated a CAV rate similar to that found by the Inspector General. Next, the study team contacted representatives of the FEMA regional offices and requested that they check their paper files for CAVs conducted in CRS communities that were not entered into the CIS. FEMA also contacted ISO and the regions and was able to supply additional CAV records. All regional offices confirmed that the records available in CIS were incomplete and supplied the study team with additional information on CAVs. Ultimately, eight of the 10 regional offices confirmed that there were CRS communities that had not received a CAV. All CRS communities in the other two regional offices (Regions VII and X) had received a CAV within the time period considered. The study team completed its data collection by reviewing the records entered into the CIS since data collection began and incorporating updates.

The study team found that 90 percent of current CRS communities have received a CAV—a much better rate than that reported by the Inspector General (2002).⁵³ The 10 percent of CRS communities that have not received a CAV represent about 79,000 flood insurance policies with about \$10.5 billion insurance in force and over \$27 million in premiums collected annually. These premiums reflect a premium discount applied to reward reduced risk and exemplary floodplain management.

CAV rates for CRS communities vary by region. Region III had the lowest CAV rate; it conducted CAVs in 72 percent of CRS communities. The staff in that region indicated that they prefer to devote scarce resources to conducting CAVs in communities with suspected compliance problems, not model communities, which CRS communities are assumed to be.

⁵² A model for conducting that research is presented in Appendix G.

⁵³ A list of all current CRS communities that have not received a CAV, along with the communities' classes and dates of entry, can be found in Appendix H.

As table 10 shows, CAVs have been conducted in all CRS communities that are Class 4 or better. However, five Class 5 CRS communities have not received a CAV. In all, 55 percent of CRS communities that have not received a CAV are Class 8 or better (53 of 96 communities).

TABLE 10: Distribution by Current Class of CRS Communities without a recent CAV, as of August 2004.

Class	Total CRS Communities	Number Without a CAV	Cumulative Percentage of Communities Without a CAV
1	0	0	0
2	1	0	0
3	0	0	0
4	2	0	0
5	23	4	4
6	52	2	6
7	191	9	16
8	396	38	55
9	336	43	100
Total	1001	96	100
NOTE: "Recent" means within 2 years of the community's entry into the CRS.			
SOURCE: CIS and personal communications with FEMA regional officials (various dates)			

8.3.4 Noncompliance in CRS Communities

FEMA policy states that a CRS community is not in compliance if "there are outstanding program deficiencies or violations from a CAV." If program deficiencies or violations are identified during a CAV, guidance states that the regional office "may allow up to six months after the date of the CAV follow-up letter for a community to correct program deficiencies or remedy all violations to the maximum extent possible. CRS communities are expected to show immediate actions (not intentions) to remedy the problems."

The study team examined the findings of CAVs conducted since communities entered the CRS to analyze the extent and nature of noncompliance in CRS communities and whether problems were addressed (as evidenced by a closed CAV). Of the 905 CRS communities in which a CAV has been conducted, 105 (12 percent) have had serious program deficiencies identified since they joined the CRS.⁵⁴ The most common category of deficiency was in ordinance administration and enforcement (62 communities or 46 percent of the deficiencies noted) and engineering was the next-most-common deficiency (26 percent). Of all these 105 communities, 38 had CAVs that were still open (compliance problems officially unresolved) as of September 2004. All of these CAVs have been officially unresolved for at least 15 months and most for several (up to 10) years (table 11).

It is clear that many communities have CRS classifications (and accompanying premium discounts) that they likely do not deserve. Even though FEMA's guidance allows regional office staff to grant extensions of the six-month time period for addressing compliance problems to communities if "remedial measures are underway, but not completed," it is difficult to imagine that that circumstance applies to all 38 of these communities and that extensions amounting to many years could properly be granted. On the other hand, CRS communities are generally large

⁵⁴ This finding may under-represent the actual percentage of CRS communities in which program deficiencies have been identified because CAV findings were not available for all 905 communities.

communities with significant floodplain development. Some of them grant thousands of permits a year and some problems are inevitable.

CRS communities at higher classes are less likely to be noncompliant with the NFIP's minimum requirements. Seventy-two percent of CAVs in which serious deficiencies were found occurred in Class 9 communities, and 28 percent were found in Class 8 or better (table 12), with 12 percent of serious program deficiencies found in communities in Classes 7, 6, and 5.

The study team found that the criteria use for imposing retrogrades are inconsistent across the regional offices. Seventeen communities have been retrograded to Class 10 (removed from the CRS) for noncompliance with minimum NFIP requirements (table 13). According to FEMA, several other communities have chosen to leave the CRS after compliance problems were discovered, rather than face an involuntary retrograde.

Letters to the communities usually cited an unresolved CAV as the reason for the retrograde. Reports for eight of those CAVs were available in CIS. Of those, CAV notes for three listed serious program deficiencies, and those three communities were retrograded to Class 10 one to two years after that CAV. In the remaining five, only minor deficiencies were noted, but the communities nevertheless were retrograded, usually one to two years after the CAV.

Although flexibility in addressing compliance problems and in the length of time allowed to do so are reasonable approaches in the NFIP compliance program, for communities in the CRS too much flexibility is unwarranted. It is difficult to justify why communities that have been admitted to the CRS based on the premise that they have been and continue to meet *minimum* NFIP standards should continue to participate indefinitely while they remedy their problems.

7.3.5. Findings and Conclusions

The study team's analysis found monitoring and enforcement in CRS communities to be deficient. Because compliance must be certified before entry into the CRS is approved and because CRS participation brings additional opportunities for communities to have contact with technical experts in the FEMA regional office, the state, and ISO, all CRS communities should be compliant with the minimum requirements of the NFIP. The team found that

- Communities have entered the CRS without having NFIP compliance verified;
- Communities have been upgraded in CRS class while officially noncompliant;

TABLE 11: Open CAVs in which Serious Program Deficiencies Were Noted in Current CRS Communities^{1,4}

Community	Category of Reported Serious Deficiency	CAV Date	Current Class ²	Class at CAV	Policies in Force ³	Total Insurance Coverage ³
Region I						
Harwich, MA	ORD	8/12/1997	9	9	460	\$89,792,400
Region III						
Bloomsburg, PA	ORD	3/28/1996	8	9	315	\$31,340,000
Arlington County, VA	ENG	11/1/1993	9	9	189	\$34,676,100
Region IV						
Gulfport, FL	ENF	2/10/1994	7	9	2,418	\$267,408,600
Hernando County, FL	ENF	8/22/1994	8	9	3,399	\$468,324,900
Jacksonville Beach, FL	ENF	9/30/1994	8	8	4,756	\$887,340,300
Manatee County, FL	ENF	3/16/2000	7	7	16,249	\$2,481,401,400
North Miami, FL	ORD, ENF	8/26/2002	5	5	7,212	\$935,240,000
St. Petersburg, FL	ORD, ENF	6/2/2003		7	33,290	\$4,459,415,100
	ENF	3/22/1994	7	8		
Greenville, NC	ORD	8/29/2002	8	9	895	\$128,420,000
Kinston, NC	ENF, ENG	9/25/2002	9	9	431	\$63,360,600
Lenoir County, NC	ENF, ENG	8/7/2002	9	9	224	\$33,119,800
North Topsail Beach, NC	ENF	4/12/2000	8	8	1,108	\$142,627,000
Topsail Beach, NC	ENF	9/27/2001	6	9	1,150	\$203,721,800
Aiken County, SC	ENG	8/23/2002	9	9	62	\$9,082,500
Lexington County, NC	ENF	8/8/2001	9	9	727	\$103,517,000
Region V						
Noblesville, IN	ORD	12/18/1996	8	8	201	\$29,878,400
Delta, OH	ORD, ENF	2/22/1996	9	9	17	\$1,195,500
Ozaukee County, WI	ENG	8/17/1994	9	9	66	\$11,193,700
Region VI						
League City, TX	ENF	12/15/1998	9	9	9,380	\$1,822,241,500
Region VIII						
Aurora, CO	ORD	12/7/1993	8	9	278	\$42,099,300
Fremont County, CO	ENF, ENG	2/12/1998		9	97	\$12,483,900
	ENG	2/24/1995	9	9		
Gunnison County, CO	ENF	9/27/1999	9	9	116	\$18,764,500
Littleton, CO	ENF	1/25/1999	7	7	98	\$17,195,200
Louisville, CO	ENF	2/25/2000		9	18	\$4,117,300
	ORD, ENF	12/8/1992	9	9		
Parker, CO	ENF	2/10/1999	7	7	21	\$4,603,700
Pitkin County, CO	ENF	2/16/1994	8	9	116	\$19,247,900
Steamboat Springs, CO	ENF	6/23/2000		9	178	\$28,903,000
	ORD, ENF	11/18/1997	9	9		
Flathead County, MT	ENF	4/11/1996	9	9	217	\$36,800,900
Lewis And Clark County, MT	ENG	9/29/1994	8	9	102	\$10,990,700
Region IX						
Fairfield, CA	ORD, ENF	2/6/2002	8	9	475	\$81,825,600
Richmond, CA	ENF	8/3/1999	9	9	72	\$18,292,000
Santa Clara, CA	ENF	9/13/2002	8	8	1,586	\$257,709,200
Solano County, CA	ENF	3/25/2002	8	8	333	\$64,325,500
Yorba Linda, CA	ORD, ENF, ENG	4/26/2000	8	8	59	\$13,021,400
Storey County, NV	ENF	8/14/2002	8	8	172	\$21,869,700
Region X						
Eugene, OR	ENG	6/25/1999	7	8	808	\$157,692,100
Medford, OR	ENF	3/26/1998	9	9	222	\$32,240,100
TOTAL: 38 Communities					87,517	\$13,045,478,600

¹Status of CAVs was confirmed by FEMA in personal communication to AIR, September 2004.

²Class as of May 2004 ³As of October 2003 ⁴Regions II and VII had no CRS communities with open CAVs

ORD= Floodplain management regulations ENF= Administration and enforcement process and procedures

ENG= Engineering OTH= Other community land use policies and procedures such as the local zoning or building code requirements inconsistent with local floodplain management regulations

SOURCE: CIS (CAV date, findings); FEMA BSA (PIF, Total Coverage, Class at Time of CAV); May 2004 Insurance Manual (Current Class)

TABLE 12: CRS Communities in which Serious Program Deficiencies were Found, by Class at Time of CAV

Class of Community at Time of CAV	Number of CAVs during which serious Program Deficiencies were found in Current CRS Communities
9	81
8	20
7	10
6	1
5	1
4	0
3	0
2	0
Total	113*

*Total does not equal total of communities in which serious problems were found because some communities had more than one CAV in which a serious deficiency was noted.

SOURCE: CIS, May 2003; personal communications with FEMA regional officials (various dates)

TABLE 13: CRS Communities Retrograded to Class 10 for Compliance Issues, 1990-2004

Atlantic City, NJ*
Babylon, NY
Bayville Village, NY*
Cedar City, UT
Coralville, IA
Farmington Hills, MI
Highland Heights, OH
Lafourche Parish, LA
Martin County, FL*
Mesa, AZ
Mobile, AL
Monroe County, FL
Naperville, IL
Ponce Inlet, FL*
Savannah, GA*
Sea Isle City, NJ
South Pasadena, FL*
*Community was allowed to reapply after addressing all violations/ deficiencies, and after minimum of one year review period. SOURCE: FEMA Personal Communication, January 2005.

- CRS communities are not receiving CAVs or CACs with the frequency required by FEMA guidance; and
- Some CRS communities receive prompt retrogrades for NFIP compliance problems while other noncompliant communities continue to participate in the CRS for long periods.

These shortcomings are the result of inadequate recordkeeping, confusion within ISO and the FEMA regional offices about their roles and responsibilities, unclear policy on CAVs, and communication gaps between ISO and FEMA about CRS upgrades.

Recordkeeping Deficiencies

Because the CIS does not contain complete CAV records, FEMA is not always aware of whether CRS communities are being monitored for compliance on a routine basis, like other NFIP communities. Even more remarkable, some FEMA regional offices were unaware of CAVs that had occurred in CRS communities. Several regions told the study team that they either could not produce a complete list of CRS communities that had not received a CAV or could not produce one without getting additional data from the states. Additionally, many regional offices told the study team that some CRS communities had not received a CAV, but FEMA headquarters and ISO had documentation of CAVs that had been done in those communities. It is not clear that FEMA regional staff receive or are even aware of the result of ISO's visits to communities or, conversely, that ISO staff are informed of the results of CAVs. The study team identified multiple instances of both problems.

The study team's findings indicate that ISO accepts letters from the FEMA regional offices certifying compliance even when the letters do not provide the date of a recent CAV and other essential information. Because a recent "clean" CAV is required for acceptance into the CRS, it is imperative that ISO be able to readily determine whether a community has met the requirement. An inability to do so has resulted in communities' entering the CRS without demonstrating compliance. A standardized process by which FEMA certifies compliance would remedy this situation.

CAVs for CRS Communities

Current guidance does not clearly explain how frequently FEMA and the states should conduct CAVs in CRS communities. FEMA wrote in its response to the Inspector General (2002) that it would "require that all CRS communities be covered by a CAV over the next 3-5 years." It wrote that the goal would be "accomplished through the...policy of including existing CRS communities on normal CAV schedules," (Inspector General 2002) thereby indicating that communities are normally visited for a CAV on a regular cycle of no greater than five years. FEMA followed this response with a 2002 memo to the FEMA regional offices, in which it said "CRS participating communities should be scheduled for a CAV or CAC as any other NFIP community based on selection criteria developed by the FEMA regional office and in accordance with guidance provided in the *Guidance for Conducting Community Assistance Contacts and Community Assistance Visits*." However, the study team has illustrated earlier in this report that regions do not conduct CAVs with that degree of regularity. It is therefore unclear to the study

team and to the FEMA regional offices and states how frequently headquarters intends CAVs to be conducted in CRS communities.

Roles and Responsibilities

A clear distinction between the roles of ISO and FEMA is key to ensuring that CRS communities are monitored adequately and compliance problems addressed immediately. However, some regional staff told the study team that they believe that conducting CAVs in CRS communities is not a good use of resources because they assume that all CRS communities are compliant or because they mistakenly believe that ISO monitors CRS communities for compliance. ISO is neither qualified nor instructed to inspect CRS communities for compliance with the NFIP. ISO inspections are in-depth analyses of community satisfaction of the specific requirements of the CRS, not of the NFIP.

When this confusion exists, the importance of FEMA's monitoring of CRS communities is underestimated. Regional staff who believe that ISO monitors communities for compliance may be less likely to conduct CAVs in CRS communities. When this occurs, there is danger that some CRS communities may be participating in the CRS without being compliant with the NFIP's minimum requirements.

Communication about CRS Upgrades

FEMA currently relies on informal communication between its staff and the ISO to ensure that temporarily noncompliant communities are not upgraded and persistently noncompliant communities are retrograded. Likewise, ISO is expected to notify the FEMA regional offices of communities eligible for upgrade twice annually so that there is an opportunity for FEMA to comment on the community's level of compliance and recommend against an upgrade, if necessary. However, FEMA neither requires the regional office to certify that the community is compliant nor requires that the community have a clean CAV to be upgraded.

Although FEMA has occasionally delayed a community's upgrade until compliance work could be completed, the study team's findings indicate that this system is not sufficient to ensure that noncompliant communities do not benefit from class improvements. Communities should not be upgraded until a CAV is conducted and closed. The FEMA regional office should certify this fact and the community's compliance.

7.3.6 Recommendations on the CRS

Improve recordkeeping and communication about CRS communities among FEMA headquarters, regional offices, the states, and ISO. Improved recordkeeping in the CIS (FEMA's computerized recordkeeping system) would allow FEMA to better track which CRS communities have received CAVs and whether compliance problems identified in those CAVs have been resolved. A system should be established to automatically convey to the other parties any contact with or visit to a CRS community.

Clarify the roles and responsibilities of ISO and regional office staff. Guidance from FEMA should address the misconceptions about the role played by ISO personnel when they visit communities.

Standardize the procedure for certifying NFIP compliance upon application to the CRS. The regional office's letter certifying compliance should give the date the most recent CAV was initiated and the date it was closed. ISO should accept only letters that include that information.

Require that NFIP compliance be certified by the FEMA regional office before a CRS community is upgraded. This certification letter could follow the format of the letter used upon application to the CRS.

Clarify the schedule for routine monitoring of CRS communities. If FEMA intends that some contact or specifically a CAV be completed for CRS communities on a set schedule, that fact should be communicated to regional offices and states.

8. SUMMARY AND CONCLUSIONS

There is considerable challenge in drawing conclusions and making generalizations about compliance in a program that involves more than 20,000 communities whose characteristics vary widely. Based on its interviews, field work, and data analysis for this evaluation, the study team offers here some observations about the nationwide status of community compliance and the effectiveness of the NFIP model for ensuring that communities achieve compliance.

Perfect community compliance, nationwide, is an ideal but not one that is likely to be achieved unless fundamental changes are made to increase the level of funding for the NFIP at both the national and state levels and to provide added insulation from normal political influences. Given the fact that a primary NFIP goal—minimizing flood losses—relies on land use authority that resides in state and local governments rather than at the federal level, implementation of a large proportion of the program’s requirements naturally depends on community staff and officials who operate at a large remove from the federal personnel who oversee the program and also have multiple priorities that often compete with floodplain management. Reliance on local implementation is a very inexpensive avenue for federal program implementation, but it will inevitably be accompanied by wide variation in effectiveness. Many communities—because of lack of resources or expertise, or both—struggle to implement any type of regulations and floodplain management regulations tend to be more complex and technical than most. Thus noncompliance at some level must be expected.

It is, therefore, a real challenge for the NFIP to achieve a high level of community compliance nationwide. Limited resources, primarily in terms of numbers of experienced federal and state professionals available to conduct community visits and to develop and maintain an efficient and accurate national database, have been identified throughout this report as factors that inhibit better operation of the compliance program and hence better compliance. Of nearly equal importance in hindering compliance activities are the political considerations: not only direct pressure that is brought to bear when communities complain to their Congressional delegations about possible sanctions but also the potential political fallout that some players at all levels perceive may accrue if they take strong action to enforce program requirements. These political considerations have important consequences for NFIP compliance even if the potential for political fall-out is more perceived than real.

The public policy question becomes, then, whether a higher level of compliance can be achieved, and whether the trade-offs necessary to do so are acceptable, given available funding and political will. This is a complex calculation that cannot be fully resolved by the study team and that also will change over time. Nor are there comparable governmental programs or compliance efforts to serve as a overall useful guide or baseline. However, with the trade-offs and constraints in mind, it is possible to speak in general terms about current status and future possibilities.

8.1 The Framework for NFIP Community Compliance

FEMA uses an enforcement/compliance program model that can best be characterized as cooperative enforcement, combined with numerous voluntary approaches (most notably financial incentives offered through the insurance side of the NFIP). Under this cooperative enforcement scheme, it is assumed 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. Based on this assumption, a compliance program's primary goal would be to supply ongoing education about the program standards and how to reach them. This study and previous research have shown that, among the 20,000 participating communities nationwide, there is a healthy level of willingness to comply with the NFIP standards; many exemplary local programs; and impressive progress being made in coping with flood risk. This success and the fact that most of those communities are in fact operating competent programs supports the underlying assumption and confirms that a predominantly cooperative enforcement model is an appropriate match for the NFIP. This is underscored by the research literature on cooperative enforcement strategies, which describes effective use of this type of model by programs with characteristics resembling those of the NFIP.

The NFIP compliance model used by FEMA has three main components: promotion of compliance (technical assistance, education, training, incentives); monitoring of community compliance (contact with communities, use of institutionalized indicators, and recordkeeping); and enforcement (use of sanctions including probation and suspension). The compliance program based on this model makes good use of the institutionalized aspects of the NFIP and is well-integrated with the NFIP insurance mechanisms. Even though the compliance program was formalized 20 years ago, the study team encountered no major gaps in the framework of the compliance program itself, except that its guidance documents have not been updated to include such program enhancements as the CRS and the CIS. There are some shortcomings in the implementation of the program

8.2 Promotion

Of the three enforcement program components, FEMA and its state partners put the vast majority of their resources and effort into promotion of community compliance. This is appropriate for a model based on a cooperative enforcement approach. Training and technical assistance are the two promotion efforts most emphasized by FEMA and are certainly robust tools for promoting compliance. They are not as effective as they could be if there were more resources for both FEMA and the states to increase staff levels and travel support, and to produce and deliver more workshop and training materials.

8.3 Monitoring

Although the emphasis on promotion/technical assistance emphasis is effective for the NFIP, the monitoring component cannot be shirked, because the information about and documentation of what is happening on the ground is essential both to the provision of technical assistance and to the investigation and sanctioning of noncompliance.

This study has shown that the NFIP's monitoring approach functions fairly effectively for purposes of detecting the need for additional promotion of compliance (technical assistance and education) but not as well for detecting compliance problems that need to be addressed through additional technical assistance or possibly enforcement. On average, each year no more than 10 percent of NFIP communities receive a monitoring contact—and that occurs only by using all available resources at both the FEMA regional offices and the states. Only about half of those contacts are comprehensive evaluations (including a site visit) of a local program. This frequency is not enough to detect noncompliance and address it before the potential flood damage is

increased, and falls short of FEMA's previously stated goal of contacting every community at least once every five years.

It is difficult to see how this situation can be remedied except with additional funding for floodplain management personnel at the FEMA regional offices or in the states. Thorough reviews of local programs must be done, and they take time. There are far too few personnel available to do what needs to be done.

The study also found some weaknesses in FEMA's system for documenting and cataloging both the information that it generates from its own monitoring activities and that which it obtains from other sources for purposes of monitoring. FEMA's CIS database has the potential to be a strong monitoring tool, but its records on community contacts and visits and other activities are incomplete and their accuracy could not be verified. Some additional pieces of information that would be useful for monitoring purposes, such as records of training and technical assistance provided to individual communities, should be added to the CIS. Finally, the CIS's software for compiling and reporting information from the database is not flexible enough for the type of analyses that would be most helpful for monitoring and evaluating compliance. These shortcomings have made it difficult for users to employ the CIS and have contributed to a reluctance on the part of federal regional and state personnel to use the system as much as it could be. Further, because of the problems with CIS, FEMA has not been able to supply the kind of evidence (hard and accurate documentation of the number of community contacts, visits, technical assistance responses, staff in training sessions, correspondence, etc.) sought by outside evaluators, Congress, and taxpayers.

FEMA has worked continuously since the launching of the CIS to overcome technological difficulties inherent in a large database that must be used by federal and state staff at hundreds of remote locations. The accomplishment—reached near the end of this study—of having the CIS universally accessible through the web should remedy many of the past difficulties. Action upon the recommendations in the next chapter would help strengthen the other weaknesses in the CIS.

8.4 Enforcement

As noted in the literature review, the study team was unable to find situations sufficiently similar to the NFIP from which to draw a "norm" of frequency with which enforcement sanctions or penalties should be applied to be most effective. However, research on compliance and enforcement has demonstrated that the presence of a credible threat of a penalty is useful and perhaps even necessary to achieve the highest possible levels of compliance, even in cooperative enforcement models. This is borne out by the compliance history of the NFIP, which shows that some communities are recalcitrant and appear to respond only to a serious threat or the imposition of a penalty.

If the enforcement mechanism in a governmental compliance program is widely understood to be applied consistently and with certainty, the literature suggests that it may not need to be applied often. An infrequently applied penalty can be explained, however, by either an effective system or an ineffective one in which those in charge of enforcement are being overly selective in their use of the mechanism. In such a case, a more solid understanding of how the

enforcement mechanism is applied must rely on qualitative research on people's understanding of where the system lies along the effectiveness continuum to augment quantitative indicators.

In the case of the NFIP, the strongest community-wide enforcement tools (probation and suspension) indeed have been applied relatively few times. Formal threats of probation in the form of probation letters have been issued 104 times in the history of the NFIP; probation has been imposed 49 times; 10 communities have been suspended. It is notable that, when FEMA has formally threatened and/or imposed probation, compliance has been achieved in 85 percent of the cases. However, there is a widespread perception among FEMA and state staff (and perhaps among communities) that FEMA is highly unlikely to apply sanctions in most cases. Most importantly, interviews revealed considerable dissatisfaction among floodplain management professionals with FEMA's relatively infrequent use of its two strongest enforcement tools.

This study found, further, that there are numerous real and perceived internal obstacles to the imposition of the first sanction, probation. Under the NFIP model (as implemented), the bulk of resources and effort are devoted to providing a range of technical assistance services to communities and their staffs. This has created a climate in which services and guidance are readily offered and accepted but a stricter, enforcement-oriented approach layered on top can be an awkward fit. This is particularly true because the same personnel are expected to carry out both functions, and this difficulty was borne out in interviews with FEMA and state personnel. The result is that it can be a very long, slow step from one phase (providing technical assistance) to the next (imposing the probation penalty) whereas research suggests that there ought to be a short, swift movement into sanctions if they are to be effective in inducing compliance. Other obstacles include confusion about the documentation required, possible political pressure, turnover in personnel, and shortage of staff time to give proper attention to the problem.

The level of community compliance with the NFIP, and the credibility of the compliance program itself, likely would benefit if the internal obstacles could be minimized and if the perception could be strengthened that probation and suspension (or other sanctions as mentioned below) will be imposed swiftly when necessary. A few selected probation actions over time, well publicized, may well suffice.

Another option would be the introduction of one or more intermediate-level sanctions, such as an automatic mailing to policyholders when noncompliance persists for more than, say, one year, or some other public, but not drastic, measure warning of more stringent future action. Research has shown that the possible penalty does not have to be heavy to result in improved compliance. A penalty that is automatic has the advantage of shielding staff from having to take personal responsibility for the shift from friendly provision of service to the stronger, enforcement-oriented approach.

8.5 Level of Community Compliance

The NFIP has faced a vague but long-standing perception among floodplain management professionals and observers that compliance with the program standards is a problem. Through the course of this investigation, the study team encountered a strong sentiment that *enforcement* is weak, as discussed above, but when asked for estimates of the percentage of communities in their region or state that were compliant, most FEMA and state staff gave estimated performance levels of between 75 and 80 percent compliance. Further, using FEMA data from the CIS, which

may not be wholly reliable, as well as a set of nine assumptions discussed in Sections 2.4.1 and 2.4.2, the study team derived an estimate of nationwide community compliance of between 70 and 85 percent. The community noncompliance that exists represents a potential for flood damage that only manifests itself as additional costs to the NFIP if noncompliant development results from it and flood damage subsequently occurs. Because of these location- and time-specific complications, it is not possible to calculate additional costs to the NFIP or increased insurance premiums due to given levels of community noncompliance.

Both of these estimated sets of bounds for community compliance must be considered rough approximations. However, they are fairly consistent with each other and, interestingly, within the range of building compliance found in the companion study (63% of buildings fully compliant and 89% properly elevated) (Mathis and Nicholson 2006).⁵⁵ If the perception of compliance among some floodplain management professionals is lower than the reality, it may be due to the numerous small and a few egregious examples of noncompliance that garner attention and serve to frustrate people who believe in and work toward the goals of the NFIP. It may also be due to higher rates of noncompliance within certain states or regions, and the study was not designed to estimate with reliability such higher localized noncompliance rates.

This is not to say that there are no compliance problems, because it is clear that there are daunting ones and that, with increased growth and development especially in coastal areas, the situation is more likely to worsen than to improve without continued and, if possible, improved vigilance. In addition, the risk represented by the percentage of noncompliant communities and construction that may be occurring during the period of noncompliance (some of which may be at an increased risk of flooding), may be considerable, and program integrity and public policy demand that it be minimized as much as possible. An unanswered and probably unanswerable question, as discussed in Section 2.2, is what an optimal level should be, given the constraints, costs, and tradeoffs inherent in the NFIP as in all governmental programs.

8.6 Questions of Balance

It is evident that the implementation of a program to achieve community compliance with the NFIP is beset by the constant necessity of making trade-offs between varying approaches, balancing opposing needs, and weighing the costs and benefits of any action. For the most part, FEMA and the states appear to have effectively and appropriately navigated these tightropes.

The potential for higher levels of community compliance among recalcitrant communities by using strong enforcement techniques has been given up (or postponed) to allow flexibility to the regional offices and states in handling each compliance problem according to the needs of the situation. The option of devoting most of the available resources to strong enforcement and heavy penalties for violators has been traded for the cost-effective and future-oriented technique of educating and guiding community staff who will therefore be able to prevent future flood damage. When necessary, more attention is devoted to the communities with greater flood risk and/or larger policy bases, rather than always treating each community exactly the same.

These and many other trade-offs have been made, along with constant attention to political and budgetary constraints. Although there are many improvements that could

⁵⁵ Although note that, while related over the long-run, these are different measures and should not be equated.

conceivably be made to improve community compliance, given more generous funding, the reality is that actions always must be taken selectively and with an eye toward intangible costs that may be too high at any given moment.

9. RECOMMENDATIONS FOR IMPROVING COMMUNITY COMPLIANCE

Recommendations for improving the various components of the community compliance program, as implemented by FEMA and the states, have been identified and explained in the pertinent sections throughout this report. They are repeated in list format at the end of this chapter. First, the most important, overarching suggestions for improving community compliance are discussed.

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 receive 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

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. FEMA should devote attention to remedying the both the noncompliance and the perception of noncompliance among the CRS communities.

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

Additional funding should be provided to FEMA to increase the number of FEMA headquarters and regional office staff assigned to compliance work.

The practice of assigning NFIP staff to non-NFIP work should be re-examined.

FEMA should increase the CAP-SSSE funding for compliance work by the states and clarify the criteria being used for funding allocations.

FEMA should hold states accountable for non-completion of compliance work funded under the CAP-SSSE.

9.2.2 Recommendations for Promoting Compliance

FEMA should update its two general guidance documents for community assistance and community compliance.

The indicators of communities' needs for technical assistance should be tracked more closely.

FEMA and the states should continue to use the CAP-SSSE funding to deliver training to community staff.

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.

FEMA should require all regional compliance staff to attend standardized NFIP training and develop training for them in monitoring and enforcement procedures.

State and FEMA regional staff should meet routinely to share "best practices."

States should consider requiring professional certification of their local floodplain management officials.

The effect of training and technical assistance on community compliance should be measured.

FEMA should issue additional guidance on and publicize the availability of ICC coverage.

9.2.3 Recommendations for Monitoring

FEMA should clarify its goal for the frequency of contact with every community and specify its applicability to CRS communities.

More resources (funding and staff) should be found to increase the number of CAVs (and CACs) conducted by the states and by FEMA regional staff.

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.

FEMA should clarify the submit-for-rate reporting form.

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

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.”

The process of providing technical assistance to noncompliant communities should be finite and well documented.

Consideration should be given to imposing a time limit for correcting program deficiencies and remedying violations.

Consideration should be given to raising the probation surcharge.

Consideration should be given to using informational and automated methods to increase pressure on communities that are not making sufficient progress toward compliance.

FEMA should apply probation more frequently and publicize its use among floodplain management professionals.

9.2.5 Recommendations on Special Compliance Issues

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.
- Continue efforts to narrow the range of methods acceptable for calculating substantial damage/improvement.

FEMA should issue additional guidance to regional offices and communities, to correct misperceptions and misunderstanding about the acceptable use of variances.

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.
- 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.

10. APPENDICES

APPENDIX A: A Method for Measuring the Effect of Training on Compliance

To measure the effect of training and technical assistance on compliance, FEMA must first collect data on what training and technical assistance is being offered to each subject group. Measures of training output include the amount and type of training offered at EMI and in the field, and the attendees of that training. Technical assistance outputs include the number of CACs, CAVs, and other technical assistance contacts made and the types of written guidance distributed. Secondly, FEMA must collect data to measure the outcomes of training and technical assistance, i.e., the effect that the training and technical assistance has on compliance. Currently, FEMA does not collect the data necessary to measure either training outputs or outcomes. However, only small steps are necessary to begin collecting the data FEMA needs. Examples of output and outcome measures for training and technical assistance training and technical assistance are given in figure A-1.

FIGURE A-1: Training Outputs and Outcomes

Training and Technical Assistance OUTPUTS	Training and Technical Assistance OUTCOMES
<p>Measure:</p> <ul style="list-style-type: none"> • Provision of training/technical assistance <p>Assesses:</p> <ul style="list-style-type: none"> • Number of training and technical assistance opportunities provided • Types of training and technical assistance provided • People/communities reached through training and technical assistance <p>Examples:</p> <ul style="list-style-type: none"> • Number of CACs/CAVs conducted • Number of workshops/ courses delivered • Comprehensive list of communities that attend training <p>EASIEST TO MEASURE</p>	<p>Measure:</p> <ul style="list-style-type: none"> • Changes in understanding, behavior, and community compliance as a result of training and technical assistance <p>Assesses:</p> <ul style="list-style-type: none"> • Understanding before and after training or technical assistance • Compliance before and after training or technical assistance <p>Examples:</p> <ul style="list-style-type: none"> • Tests of knowledge before and after training or technical assistance • Analysis of compliance before and after training and technical assistance <p>MORE DIFFICULT TO MEASURE</p>

A.1 Evaluating Training Outputs

FEMA currently collects some information to describe the amount and type of training and technical assistance provided. Regional office and state staff are instructed to enter into CIS

what communities they contact or visit for CACs and CAVs. However, it is not clear from these records what types of technical assistance were provided in the contact. Furthermore, the study team has found that not all CACs and CAVs are entered into CIS, and other types of technical assistance contacts are never recorded in CIS.

EMI currently takes only limited steps to measure training output. Data are readily available that detail the number and types of NFIP classes given per year and the number of people who attend those classes. However, EMI does not collect data to describe which communities attendees represent. States and FEMA regional office staff also provide training to communities. States sometimes record this training as part of their CAP SSSE report, but FEMA does not currently systematically keep records of the number or types of courses or workshops offered outside of EMI.

A.1.2 Identifying Attendees at Training

EMI already collects data to quantify training output provided on-site and in field-deployed courses. Data are available on the number of courses offered, subjects of courses, and number of participants. Furthermore, EMI uses surveys of attendees to describe many characteristics of the participants. However, EMI does not ask participants to identify their role in floodplain management or the community that they represent.⁵⁶ This failure to identify communities attending training precludes any further analysis on the effects of training on the participants' communities. The study team recommends that EMI ask students to identify specifically what organization, office, or community they represent. It is only by collecting this level of detailed information that FEMA can accurately measure who receives training from EMI and how that training affects participants' compliance work.

A.1.3 Documenting non-EMI Training

In its 2003 survey of state floodplain management staff, ASFPM asked many questions about the training that the states provide to communities. The study team was able to use this data to determine the amount of training that was provided outside of EMI in 2002. However, this ASFPM survey data provided information for only a single year and did not name the communities that attended training. Without the data from this survey, FEMA would not know how much training is conducted locally because FEMA does not collect its own data quantifying training. Currently, states may provide some information on training that their staffs intend to conduct as part of their CAP SSSE agreement. States also have quarterly and annual reporting requirements that require them to describe activities conducted using CAP-SSSE funds, including training and technical assistance. However, there is no standardization of what data on training the states must provide in that report. The study team recommends that FEMA ask all states to report the number and subjects of training courses and workshops that they conduct and the number and names of communities that attended training in the previous year.

A.1.4 Additions to Recordkeeping

⁵⁶ EMI asks participants whether they are from federal, state, or local government, or if they come from the private sector or a voluntary organization. Further admission statistics identify the state that each participant comes from and the address of their office. However, this data cannot be accurately used to identify what communities attend training.

Currently, FEMA does not collect complete records of what communities receive technical assistance through CACs and CAVs. Although FEMA regional office staff members and many states are expected to enter into CIS what communities they visit for CACs and CAVs, the study team has found that staff report only a portion of CACs and CAVs. FEMA should take the steps already identified by the study team to ensure 100 percent of CACs and CAVs are recorded in CIS. Furthermore, the current format of CIS focuses on the regulatory and not the technical assistance nature of CAVs. Staff entering data in the CAV report compliance findings and then have the opportunity to enter additional notes. Staff members can use the notes section to describe technical assistance offered to the communities, but seldom do. The study team recommends that FEMA take steps to better record the technical assistance supplied in CACs and CAVs by including a section of the CIS CAV report that specifically asks staff what types of technical assistance were provided during the CAC or CAV.

Staff members in many regional offices told the study team that counting CACs and CAVs alone does not provide a complete measurement of the number of technical assistance contacts that FEMA and the states have with communities. For example, FEMA regional office staff members often visit communities or provide technical assistance via phone but do not record these contacts as CACs or CAVs. These visits are not entered into CIS because there is no category for other types of technical assistance visits. Often the only records of these visits are travel logs or letters to communities in community files in the regional offices. FEMA should instruct regional office and state staff to keep records of this additional technical assistance. This could be as simple as asking regional offices or states to keep a single phone log of telephone contacts with communities and travel log of technical assistance visits to communities. If this data were entered into CIS as “other technical assistance,” it could be available to FEMA headquarters or outside evaluators who want to measure technical assistance output. It could also be a resource to FEMA regional office staff and state floodplain management staff to use in prioritizing communities for future CACs and CAVs.

A.2 Evaluating Training Outcomes

Identifying training and technical assistance output is only the first step in measuring their effects on community compliance. FEMA must also measure the outcomes of training and technical assistance. The study team recommends that FEMA evaluate training on four levels: evaluation of reaction (level 1), evaluation of learning (level 2), evaluation of behavior (level 3), and evaluation of results (level 4) (see table A-1). It is not necessary to evaluate training on all of these levels to *begin* to understand the effect of training on compliance; however, the value of the analysis increases as the levels of evaluation increase. The study team provides recommendations for measuring outputs on each of the four levels. FEMA should decide which recommendations to implement based on the resources it has available.

A.2.1 Using Course Evaluations and Periodic Surveys

EMI currently administers a course evaluation form to participants in EMI resident courses and field-deployed training. The course evaluation form is administered immediately following training while students are still at the training site. The course evaluation form asks participants to rate statements about the course on a 6-point range, one being “strongly

TABLE A-1: Four Steps for Evaluating Training Outcomes

<p>Level 1: Reaction</p> <p>Did the participants like the training/technical assistance? Did it meet their expectations? How do participants plan to use what they learned in future NFIP work?</p> <p>Measurement tools: Course evaluations and periodic surveys</p>
<p>Level 2: Learning</p> <p>Did the participants' skills, knowledge, or attitudes change as a result of the training/technical assistance?</p> <p>Measurement tools: Tests before and after training (administered at training site), surveys of participants</p>
<p>Level 3: Behavior</p> <p>Did the participants change their behavior as a result of the training/technical assistance?</p> <p>Measurement tools: Survey three months to a year following training/technical assistance, CAV before and after training/technical assistance</p>
<p>Level 4: Results</p> <p>Did the change in behavior have an effect on community compliance?</p> <p>Measurement tools: CAV before and after training/technical assistance; noted improvement in compliance following training (as evidenced by entry into CRS, certification in floodplain management, fewer flood insurance claims following a disaster, implementation of a compliant ordinance, etc)</p>

SOURCE: Four Steps for Evaluating Training Identified by Kirkpatrick (1959)

disagree,” five being “strongly agree,” and six being “not applicable.” Examples of statements that participants are asked to rate include, “[the instruction] subject was thoroughly covered,” “course expectations, requirements, and objectives were made clear,” “[the course] contributed to my knowledge and skills,” “my knowledge of the subject is extensive after completing this course,” and “my knowledge of the subject was already extensive before I took this course.” Additional questions in the course evaluation ask students to rate the quality of course content and quality of instruction separately for each unit of the course taught. Participants rate each unit on a scale of one to five, one being the lowest, and five the highest. Finally, participants are given to opportunity to add open-ended remarks at the end of the course evaluations. Course evaluations are posted on EMI’s website and can be accessed by those with FEMA permission. Evaluations are anonymous. EMI staff and outside evaluators can use these course evaluations to rate participants’ initial reaction to training. EMI uses course evaluations to give teachers feedback on their training and to periodically change course content or offerings.

FEMA regional office and state floodplain management staff who deliver training outside of EMI may choose to collect similar information from their students. However, they are not required to do so. Nor does FEMA collect such data from courses outside of EMI. The study team recommends that FEMA ask trainers to do so, perhaps using the course evaluation format already developed by EMI. For such data to be beneficial to FEMA’s overall training efforts, the study team recommends that FEMA provide the mechanism for data to be collected in a central location, perhaps a website. Data could be stored for analysis by FEMA or outside evaluators.

Similar surveying techniques could be used to rate participants’ reaction to technical assistance. Collection of data detailing output of technical assistance would give FEMA a database of recipients of technical assistance. FEMA could periodically survey a sample from

that database to rate their reactions to the assistance. The results of these surveys would allow FEMA to measure the reactions to and perceptions of various forms of technical assistance.

A.2.2 Pre- and Post-Testing

In the course evaluation forms distributed at EMI following training, participants are given the following statements and asked to rate them from “strongly disagree” to “strongly agree”: “My knowledge of the subject is extensive after completing this course,” and “My knowledge of the subject was already extensive before I took this course.” Participants’ ratings of these questions allow evaluators to estimate the increase of participants’ *perceptions* of their knowledge of the subject as a result of the training. This measurement of perception can be useful and should be continued.

Tests administered to participants before and after training are even more useful for measuring increased knowledge resulting from training. Pre-training tests establish participants’ baseline knowledge of a subject. Improved scores on post-training exams can be used to show how effective the training was at increasing participants’ knowledge. By looking at the specific areas of weakness shown in incorrect answers on post-training tests, trainers and evaluators can determine what areas of training were more or less effective than others. Trainers at EMI currently administer a pre-test before training and an exam following training. Tests are intended to inform participants of their weak areas so they will seek outside help in those areas when they return to their jobs. EMI collects final exams, but not pre-tests. Although EMI would not make any exam results available to the study team for this report, EMI could collect and use those data to determine changes in knowledge about the NFIP’s requirements following training.

FEMA regional office and state floodplain management staff who deliver training may choose to collect similar information from their students. However, they are not required to do so. Nor does FEMA collect such data from courses outside of EMI. The study team recommends that FEMA encourage outside trainers to conduct tests before and after training. Trainers could use the results to evaluate their own courses. For such data to be beneficial to FEMA’s overall training strategy, the study team recommends that FEMA provide the mechanism for aggregate results to be collected in a central location, perhaps a website. Data could be stored for analysis by FEMA or outside evaluators.

A.2.3 Comparing CAVs

The final levels of evaluation, measure of behavior changes and results of training and technical assistance, are traditionally the most difficult to measure. However, these measurements are ultimately the most important measurements in the evaluation. In interviews with AIR, FEMA regional office staff mentioned a variety of ways that they anecdotally note the effect of training and technical assistance on community compliance. Those staff members said that they would think training had a positive effect on compliance if they saw the following changes in a community following training or technical assistance:

- Increased sophistication of questions they receive from communities after training (7)
- CAVs that find fewer violations after training (2)
- Communities entering the CRS following training (2)

- More CFMs or participating communities in an area after training (1)
- Decline flood insurance claims in a community following training (1)

FEMA must have a complete understanding of compliance in communities *before* they attend training as well as after training to determine improvement in compliance. For this to occur, it is necessary that a sample of communities have a CAV before training and then after training. If funding allows, the study team recommends that FEMA measure changes of behavior and results of training by conducting CAVs in a sample of communities before and after those communities attend training.

A.2.4 Isolating Training Effects

Once FEMA identifies changes in behavior and compliance following training or technical assistance, it is important to determine what portion of the change can be attributed to training, in other words, to isolate the effect of the training on compliance. Although FEMA may see marked improvement in a community following training, the improvements could have been influenced by other factors. For example, a community may have had serious compliance problems, gone to training, and then remedied all of its violations. However, the remedied violations may have been caused by the same factor that influenced the community to attend training in the first place. This outside factor may have been a change in government in the community to a government more supportive of the NFIP, the threat of probation, or the realization that policyholders in the community could earn lower premium rates if the community became compliant and joined the CRS. On the other hand, compliance by a community may not progress because of changes in personnel.

Comparisons should be made across groups with similar circumstances such as whether a CAV had occurred recently and the CAV findings, staff turnover, etc. With sufficient information, statistical analyses can be run as multivariate analyses of the whole dataset controlling for each factor.

The study team recommends that FEMA also ask recipients of training and technical assistance what portion of changes in floodplain management in the community they would attribute to the training and technical assistance that they received and what other factors recipients think contributed to the improvements. Questions of this sort could be included in a survey administered to samples of recipients of training and technical assistance who joined the CRS or who had some other marked improvement following training or technical assistance.

APPENDIX B: Data Available through the CIS

FEMA's CIS database is currently accessible via the internet website at <https://portal.fema.gov>. Users are required to log in with a user name and password, obtained from FEMA. To access information in CIS, users must first designate a community. The user may search for a community by one or more of the following criteria:

- State
- Community
- FIRM Status
- Community Status
- Community ID
- County
- FHBM Status.

Once a community has been selected, the user has access to a variety of information about floodplain management, NFIP status, and compliance. At the time of this review, the main CIS interface contained four main sections from which to choose: Community, CRS, CAC/CAV, Maps, SOS (Scope of Studies), and Insurance. In addition, there were links to CIS's Reporting Tool and the mapping needs assessment process. Each section took the user to a new web page displaying information or further links for more information.

Information directly related to compliance is contained in several different subcategories. CIS features information on compliance monitoring (CAVs and CACs), incentives for exceeding minimum compliance requirements (CRS, CRS credited-activities), sanctioning for noncompliance (probation and suspension status), plus overall community data such as number of policies, permits, and variances. Some of the types of data most relevant to community compliance are shown in table B-1.

**Table B-1: Some Compliance-Related Reports
Currently Available Through the CIS Reporting Tool**

Report	Available Scope of Report				Time Period
	Nation	Region	State	Community	
Biennial Ranking of Communities by Number of Flood Insurance Policies	X	X	X		Calendar Year
Biennial Ranking of Communities by Number of Permits	X	X	X		Calendar Year
Biennial Ranking of Communities by Number of Variances	X	X	X		Calendar Year
Biennial Summary Report by Community	X	X	X		Calendar Year
Biennial Summary Report by Region and State	X	X	X		Calendar Year
CAC Follow-up		X			Start/ End Dates
CAV Follow-up		X			Start/ End Dates
Community Listing With Point Of Contact			X		
Community NFIP Probation Report	X	X	X		
Community Status Book	X	X	X	X	
Community Status Report					
Community Status Validation Report	X	X	X		
Community Suspension and Withdrawn Report	X	X	X		
Future CACs/CAVs Report	X	X	X	X	Calendar Year
Historical CACs/CAVs Report	X	X	X		Start/ End Dates
Insurance Policy/Claims Data	X	X	X	X/CID	
Regional Summary of CAC Contacts	X	X	X		Start/ End Dates
Regional Summary of CAV Contacts	X	X	X		Start/ End Dates
Summary Of Community Assistance Contacts Report	X	X	X		Start/ End Dates
Summary Of Community Assistance Visits Report	X	X	X		Start/ End Dates
Summary of CAC Findings	X	X	X		Start/ End Dates
Summary of Open CACs	X	X	X		Start/ End Dates

APPENDIX C: Active 1316 Declarations by Community

Community ID	State	Community	Structures	Percentage of Total Active 1316 Declarations
5470	TX	GALVESTON COUNTY	131	21.7
0483	TX	MONTGOMERY COUNTY	120	19.9
0287	TX	HARRIS COUNTY	68	11.3
5194	LA	CAMERON PARISH	30	5.0
5164	GA	TYBEE ISLAND, CITY OF	22	3.6
0391	MO	VALLEY PARK, CITY OF	18	3.0
0093	AZ	YAVAPAI COUNTY	15	2.5
0475	MO	PLATTE COUNTY	15	2.5
0040	MO	BUCHANAN COUNTY	14	2.3
0259	FL	TARPON SPRINGS, CITY OF	10	1.7
0231	GA	TOCCOA, CITY OF	6	1.0
0022	KY	AUGUSTA, CITY OF	6	1.0
0077	NM	SOCORRO, CITY OF	6	1.0
0839	NY	OWEGO, TOWN OF	6	1.0
0356	TX	HOOD COUNTY	6	1.0
0019	LA	AVOUELLES PARISH	5	0.8
0266	TX	GUADALUPE COUNTY	5	0.8
0622	TX	TOM GREEN COUNTY	5	0.8
0160	LA	ST. CHARLES PARISH	4	0.7
5345	NY	WESTHAMPTON BEACH, VILLAGE OF	4	0.7
0296	TX	HOUSTON, CITY OF	4	0.7
0021	AK	MATANUSKA-SUSITNA FAIRBANKS-NORTH STAR BOROUGH	3	0.5
5009	AK		3	0.5
0037	AZ	MARICOPA COUNTY	3	0.5
0273	MN	STEPHEN, CITY OF	3	0.5
0043	MO	ST. JOSEPH, CITY OF	3	0.5
0035	TX	BEXAR COUNTY	3	0.5
0297	TX	HUMBLE, CITY OF	3	0.5
0623	TX	SAN ANGELO, CITY OF	3	0.5
0131	AZ	CAMP VERDE, TOWN OF	2	0.3
0211	AR	CLINTON, CITY OF	2	0.3
5139	FL	PINELLAS COUNTY	2	0.3
0009	KS	ATCHISON COUNTY	2	0.3
0040	LA	LAKE CHARLES, CITY OF	2	0.3
5199	LA	JEFFERSON PARISH	2	0.3
0173	MO	KANSAS CITY, CITY OF	2	0.3
0729	NY	SCHUYLerville, VILLAGE OF	2	0.3
0029	SC	BERKELEY COUNTY	2	0.3
5416	SC	ISLE OF PALMS, CITY OF	2	0.3
0520	TX	PARKER COUNTY	2	0.3
0418	AL	DAUPHIN ISLAND, TOWN OF	1	0.2
0038	AZ	AVONDALE, CITY OF	1	0.2
0055	AZ	TOLLESON, CITY OF	1	0.2
0073	AZ	PIMA COUNTY	1	0.2
0181	AR	LITTLE ROCK, CITY OF	1	0.2
0025	CA	CONTRA COSTA COUNTY	1	0.2

0207	CA	NAPA, CITY OF	1	0.2
0153	FL	MANATEE COUNTY	1	0.2
0230	FL	PASCO COUNTY	1	0.2
5163	GA	SAVANNAH, CITY OF	1	0.2
0314	IL	GRAFTON, CITY OF	1	0.2
0687	IL	WHITESIDE COUNTY	1	0.2
0828	IL	TOPEKA, TOWN OF	1	0.2
0475	KS	CANTON, CITY OF	1	0.2
0135	LA	OUACHITA PARISH	1	0.2
0123	ME	ANSON, TOWN OF	1	0.2
0278	MI	PORT SHELDON, TOWNSHIP OF	1	0.2
0281	MI	SPRING LAKE, TOWNSHIP OF	1	0.2
0738	MI	ALGOMA, TOWNSHIP OF	1	0.2
0322	MN	NORMAN COUNTY	1	0.2
0108	MS	COLUMBUS, CITY OF	1	0.2
0204	MO	CANTON, CITY OF	1	0.2
0294	MO	PARKVILLE, CITY OF	1	0.2
0077	MT	BUTTE-SILVER BOW COUNTY	1	0.2
0239	NE	NORTH BEND, CITY OF	1	0.2
0265	NJ	OLD BRIDGE, TOWNSHIP OF	1	0.2
0416	NJ	LOWER ALLOWAYS CREEK, TOWNSHIP	1	0.2
0493	NJ	PHILLIPSBURG, TOWN OF	1	0.2
0034	NY	SCIO, TOWN OF	1	0.2
0417	NY	GREECE, TOWN OF	1	0.2
0060	OH	URBANA, CITY OF	1	0.2
0691	OH	LOCKBOURNE, VILLAGE OF	1	0.2
0220	OK	BARTLESVILLE, CITY OF	1	0.2
0483	OK	GRADY COUNTY	1	0.2
0205	PA	TINICUM, TOWNSHIP OF	1	0.2
0650	PA	MUNCY CREEK, TOWNSHIP	1	0.2
0129	SC	LEXINGTON COUNTY	1	0.2
0177	TN	MEMPHIS, CITY OF	1	0.2
0097	TX	CALHOUN COUNTY	1	0.2
0101	TX	CAMERON COUNTY	1	0.2
0204	TX	EASTLAND, CITY OF	1	0.2
0321	TX	HAYS COUNTY	1	0.2
0417	TX	KENDALL COUNTY	1	0.2
0484	TX	CONROE, CITY OF	1	0.2
0602	TX	KELLER, CITY OF	1	0.2
0704	TX	AUSTIN COUNTY	1	0.2
0706	TX	BELL COUNTY	1	0.2
1195	TX	BRAZOS COUNTY	1	0.2
1266	TX	SURFSIDE BEACH, VILLAGE OF	1	0.2
1585	TX	TIKIT ISLAND, VILLAGE OF	1	0.2
5456	TX	BAYTOWN, CITY OF	1	0.2
5463	TX	COMAL COUNTY	1	0.2
5495	TX	PALACIOS, CITY OF	1	0.2
0155	WA	HAMILTON, TOWN OF	1	0.2
5534	WA	SNOHOMISH COUNTY	1	0.2
0070	WV	KANAWHA COUNTY	1	0.2
0224	WI	ARGYLE, VILLAGE OF	1	0.2
		Total Active 1316 Declarations	603	

APPENDIX D: Suspension and Probation Records as of October 31, 2003

Region	Community	State	Projected Effective Date	Status	Date of Compliance	Date of Probation	Suspension Date
Suspended from NFIP For Failure To Enforce							
IV	Campton	KY	6/15/1990	Suspended			Suspended on 2/6/1991.
V	Grand Tower	IL	4/30/1990	Suspended			Suspended on 6/17/1991.
V	Hamilton County	IL	12/5/1998	Suspended			Suspended on 1/17/2000.
V	Washington Park	IL	7/26/1996	Suspended			Suspended on 8/3/1998.
Reinstated into NFIP							
IV	Clayton	GA	4/12/1993	Reinstated	1/31/1995		Suspended on 1/19/1994.
V	Milan	IL	7/26/1996	Reinstated	4/22/1999		Suspended on 8/3/1998.
VII	Humboldt	IA	10/29/1990	Reinstated	1/25/1996		Suspended on 11/6/1991.
VIII	Glendive	MT	3/11/1998	Reinstated		3/11/1999	
Reinstated and Currently On Probation							
III	Oceana	WV	10/25/2001	Reinstated/ On probation		Extended on 10/25/2002	Suspended on 10/16/1979. Reinstated on probation on 10/25/2001.
III	Smithers	WV	10/29/1990	Reinstated/ On probation		9/6/2001	Suspended on 6/17/1991. Reinstated on 9/6/2001.
Currently On Probation							
III	Slaughter Beach	DE	8/1/2002	On probation			
III	Winchester	VA	2/7/2003	On probation			
IV	Winchester	TN	5/1/1989	On probation		Withdrew on 6/5/1989.	
V	Jersey County	IL	7/16/2001	On probation		Extended on 7/16/2002.	
V	Patriot	IN	6/30/1999	On probation		Extended on 6/30/2003.	
VI	Catahoula Parish	LA	6/9/2003	On probation			
IX	Territory of Guam	GU	4/6/1992	On probation		Extended on 4/6/2003.	
X	Dayton	WA	12/15/2001	On probation		Extended on 12/15/2002.	
Probation Lifted							
I	Farmington	ME	6/15/1989	Probation lifted		4/19/1991	
II	Plattsburgh	NY	2/11/2000	Probation lifted		2/11/2002	
III	Colwyn	PA	11/15/1995	Probation lifted		11/15/1998	
III	Dover	PA	12/6/1991	Probation lifted		12/6/1995	
III	Shickshinny	PA	4/9/1992	Probation lifted	4/1/2002	8 days before	
III	Rivesville	WV	6/17/1991	Probation lifted		6/17/1992	
III	Summers	WV	7/28/1993	Probation lifted		7/12/1998	
IV	Dallas County	AL	4/14/1995	Probation lifted		4/14/1996	
IV	Muscle Shoals	AL	11/8/1991	Probation lifted		11/8/1992	

IV	Camden County	GA	4/1/1988	Probation lifted		3/31/1989
IV	Gilmer	GA	8/19/1994	Probation lifted		8/19/1999
IV	Bell County	KY	1/1/1989	Probation lifted		10/22/1990
IV	Leslie County	KY	12/17/1992	Probation lifted		12/17/1994
IV	Colleton County	SC	7/2/1990	Probation lifted		7/2/1992
IV	Folley Beach	SC	1/6/1992	Probation lifted		1/9/1992
IV	Georgetown County	SC	5/15/1992	Probation lifted		5/15/1993
IV	McCormick County	SC	9/1/1991	Probation lifted		9/1/1992
IV	McClellanville	SC	6/1/1991	Probation lifted		6/16/1994
IV	Jackson	TN	8/5/1994	Probation lifted		8/5/1995
V	Marengo	IL	9/14/1993	Probation lifted		9/14/1996
V	Martinsville	IN	3/1/1995	Probation lifted		3/1/1998
V	Seymour	IN	10/22/1993	Probation lifted		9/19/1994
V	Medora	IN	11/20/1998	Probation lifted	11/20/2002	11/20/2002
V	Estral Beach	MI	9/10/1993	Probation lifted		9/10/1995
V	Ashtabula	OH	4/12/1993	Probation lifted		4/12/1997
V	Lawrence County	OH	10/3/1996	Probation lifted		10/4/1999
V	Reynoldsburg	OH	11/3/1989	Probation lifted		11/3/1990
VI	Hunt County	TX	6/6/1994	Probation lifted		6/6/1997
VI	Port Isabel	TX	1/14/1994	Probation lifted		6/1/1996
VI	Tiki Island	TX	9/9/1992	Probation lifted		1/22/1993
VII	Cartevelle	MO	11/18/1991	Probation lifted		3/18/1992
VII	Lincoln County	MO	3/4/1996	Probation lifted		3/4/1999
VII	Marion County	MO	6/14/1996	Probation lifted		6/14/1998
VII	Newburg	MO	9/8/1990	Probation lifted		11/13/1991
VII	Ste. Genevieve County	MO	4/22/1995	Probation lifted		9/17/1996
VII	Waynesville	MO	7/22/1996	Probation lifted		7/22/1998
VII	Scribner	NE	10/7/1991	Probation lifted		9/15/1993
IX	Cotati	CA	4/1/1998	Probation lifted		4/1/2000
	Benewah County	ID	3/4/1996	Probation lifted		8/16/1998
X	Benewah County	ID	1/15/1998	Probation lifted		9/21/2000
X	Boundary County	ID	3/4/1996	Probation lifted		3/4/1998

Remedied Violations without Probation**Time before probation that compliance was achieved.**

I	Wareham	MA	11/22/1993	Complied	11/10/1993	
I	Stratford	CT	8/28/1995	Complied	8/25/1995	3 days before
I	East Haven	CT	2/9/1998	Complied	2/5/1998	4 days before
II	Long Beach	NJ	5/17/1989	Complied	5/11/1989	6 days before
II	Monmouth Beach	NJ	11/1/2003	Complied		
II	Cicero	NY	9/15/1994	Complied	9/15/1994	Same day
II	Sea Isle City	NJ	12/1/1996	Complied	10/29/1996	30 days before
III	Elsmere	DE	11/20/1991	Complied	11/18/1991	2 days before
III	Bethany Beach	DE	11/15/1995	Complied	10/17/1995	28 days before
III	Plymouth	PA	7/28/1993	Complied	7/28/1993	Same day
III	Logan County	WV	9/28/1990	Complied	9/20/1990	8 days before
III	Mullens	WV	7/28/1993	Complied	7/28/1993	Same day
IV	Key West	FL	6/6/1989	Complied	6/16/1989	
IV	Manatee County	FL	5/25/1989	Complied	5/29/1989	
IV	Cave Spring	GA	10/25/1995	Complied	9/29/1995	26 days before

IV	Eatonton	GA	4/12/1993	Complied	2/2/1993	69 days before
IV	Glenn County	GA	8/15/1996	Complied	8/15/1996	Same day
IV	Augusta	KY	12/4/2000	Complied	7/9/2001	
IV	Biloxi	MS	10/16/1990	Complied	8/28/1990	49 days before
IV	Columbia	MS	11/20/1992	Complied	11/20/1992	Same day
IV	Ashe County	NC	10/16/1989	Complied	10/17/1989	
IV	Charleston County	SC	10/1/1991	Complied	9/25/1991	6 days before
IV	Mt. Pleasant	SC	6/1/1992	Complied	5/21/1992	11 days before
IV	Rutherford County	TN	5/6/1992	Complied	4/27/1992	9 days before
V	Indianapolis	IN	6/15/1995	Complied	6/15/1995	Same day
V	Lancaster	OH	4/22/1987	Complied	4/14/1987	8 days before
V	Niles	OH	11/29/1991	Complied	12/4/1991	
VI	Cameron Parish	LA	7/13/1990	Complied	7/5/1990	8 days ahead
VI	Salpulpa	OK	12/1/1986	Complied	11/25/1986	6 days before
VI	San Patricio County	TX	3/27/1992	Complied	3/18/1992	9 days before
VI	Surfside Beach	TX	6/1/1995	Complied	6/1/1995	Same day
VII	Fremont County	IA	3/1/1996	Complied	2/26/1996	3 days before
VII	Hamberg	IA	3/1/1996	Complied	2/26/1996	3 days before
VII	Thurman	IA	3/1/1996	Complied	2/26/1996	3 days before
VII	Jefferson County	MO	3/5/1990	Complied	3/8/1990	
VII	Parkville	MO	11/15/1989	Complied	9/7/1989	69 days before
VII	Pemiscot County	MO	7/27/1992	Complied	5/13/1992	52 days before
VII	Perry County	MO	4/1/1996	Complied	3/29/1996	3 days before
VII	Platte City	MO	3/5/1990	Complied	1/26/1990	38 days before
VII	Scott County	MO	11/2/1986	Complied	10/23/1986	10 days before
VII	Valley Park	MO	11/21/1989	Complied	11/8/1989	13 days before
VII	Cedar Creek	NE	3/30/1995	Complied	3/22/1995	8 days before
VIII	Box Elder	SD	4/15/1987	Complied	4/14/1987	1 day before
VIII	Cedar City	UT	11/12/1996	Complied	11/12/1996	Same day
IX	Sonoma County	CA	12/5/1989	Complied	12/13/1989	
X	Island County	WA	1/25/1999	Complied	1/25/1999	Same day
X	Ocean Shores	WA	8/1/1995	Complied	7/31/1995	1 day before
X	Rathdrum	ID	5/21/1996	Complied	5/20/1996	1 day before
IV	Monroe County	FL	3/1/1988	Complied	2/24/1988	5 days before
			5/31/2002	Complied	5/8/2002	23 days before

SOURCE: FEMA Headquarters 11/1/03

APPENDIX E: Communities Currently Suspended or on Probation (as of October 31, 2003)

Table SP: Communities Currently Suspended or On Probation: As of October 31, 2003

Region	Community	State	Projected Effective Date	Probation Status	Date of Compliance	Date of Probation	Date of Suspension
IV	Campton	KY	6/15/1990	Suspended			Suspended on 2/6/1991.
V	Grand Tower	IL	4/30/1990	Suspended			Suspended on 6/17/1991.
V	Hamilton County	IL	12/5/1998	Suspended			Suspended on 1/17/2000.
V	Washington Park	IL	7/26/1996	Suspended			Suspended on 8/3/1998.
III	Oceana	WV	10/25/2001	Reinstated/On probation		Extended on 10/25/2002	Suspended on 10/16/1979. Reinstated on probation on 10/25/2001.
III	Smithers	WV	10/29/1990	Reinstated/On probation		9/6/2001	Suspended on 6/17/1991. Reinstated on 9/6/2001.
III	Slaughter Beach	DE	8/1/2002	On probation			
III	Winchester	VA	2/7/2003	On probation			
IV	Winchester	TN	5/1/1989	On probation		Withdrew on 6/5/1989.	
V	Jersey County	IL	7/16/2001	On probation		Extended on 7/16/2002.	
V	Patriot	IN	6/30/1999	On probation		Extended on 6/30/2003.	
VI	Catahoula Parish	LA	6/9/2003	On probation			
IX	Territory of Guam	GU	4/6/1992	On probation		Extended on 4/6/2003.	
X	Dayton	WA	12/15/2001	On probation		Extended on 12/15/2002.	

SOURCE: FEMA Personal Communication.

APPENDIX F: Sequence of Events in an NFIP Enforcement Action

Region or state identifies program deficiencies and apparent violations, documents them, and provides assistance and consultation to community ⁵⁷ .	
Region or state requests that program deficiencies be corrected and violations remedied, suggests appropriate remedial measures, and sets deadline for compliance ⁵⁸ .	Community corrects the program deficiencies and remedies the violations. No enforcement action required.
Step 3. Unsatisfactory community response. Region notifies headquarters that 90-day probation letter will be issued in 10 days. Headquarters prepares for notification of impending probation and of surcharge.	
Regional director notifies community by certified mail that probation begins at conclusion of 90-day notice period unless remedial measures are taken. Community notification takes place at least 31 days before 90-day notice begins. Letter outlines all substantive deficiencies and violations as well as suggested remedial measures. Region or headquarters notifies appropriate congressional delegations.	
No later than 30 days after 90-day notice period begins, Region issues media release.	Satisfactory community response. Community corrects program deficiencies and remedies violations. No enforcement action required.
Unsatisfactory community response. Probation goes into effect at conclusion of 90-day notice period. Surcharge imposed.	
Region sends letter to community setting new compliance deadlines and revising required remedial measures if necessary.	Satisfactory community response. Community corrects program deficiencies and remedies violations. Probation is either lifted or probation extended for up to one year with CAV or other follow-up visit scheduled. Surcharge continues for one-year period or until end of year, respectively.
Community response unsatisfactory. Regional director recommends suspension to headquarters and submits documentation and chronology of events.	
Headquarters reviews Region’s recommendation for suspension.	Headquarters does not concur with recommendation. Community is referred back to Region for more documentation or community assistance. Probation and surcharge continues.
Headquarters agrees and sends 30-day show cause letter.	
Community submits response to 30-day show cause letter to Region along with evidence of compliance. Region reviews submission and makes recommendation to headquarters on whether community has shown cause.	
Headquarters reviews Region’s recommendation.	Headquarters determines community should not be suspended. Probation is either lifted or extended for no more than one year.

⁵⁷ This timeline applies to enforcement sanctions imposed by FEMA (though usually with state assistance and input). Some states with more restrictive floodplain management regulations impose their own enforcement sanctions independently of FEMA and the NFIP.

⁵⁸ If the state conducted the initial visit or contact that detected violations, it can refer the issue to the regional office before the request for violations to be remedied. The region can then conduct a compliance visit to verify violations. The approach taken by the state and region depends on the characteristics of the situation and the regional and state capabilities. On any enforcement sanction, the region and state coordinate to decide the proper course of action.

Headquarters determines that community has not shown cause and should be suspended. Sends 30-day suspension letter. Headquarters publishes notice in *Federal Register*.

Region reviews any further submission by community and makes recommendation to headquarters to suspend or not suspend.

Headquarters reviews Region's recommendation.

Headquarters decides to withdraw suspension. Probation is either lifted or extended for no more than one year.

Community suspended from NFIP. Suspension lasts until compliance is achieved or may extend for up to one year beyond that. Headquarters issues media release.

Community applies to Region for reinstatement and submits evidence of remedial actions taken and resolution of intent to comply.

Region reviews submission, obtains more data, conducts visit if necessary. Regional director makes recommendation to headquarters.

Headquarters reviews Region's recommendation.

Headquarters reinstates community either on full program status or on a probationary status with CAV or other follow-up visit scheduled. Surcharge begins and continues for at least one full year.

Community remains suspended until receipt of satisfactory reinstatement submission or remains suspended for up to one year after a satisfactory reinstatement submission.

SOURCE: FEMA 1986, p. 3-17-3-21

APPENDIX G: An Explanation of CRS Activities

Public Information Activities

This series credits programs that advise people about the flood hazard, flood insurance, and ways to reduce flood damage. These activities also provide data needed by insurance agents for accurate flood insurance rating:

- Elevation Certificates (Activity 310): Maintain FEMA elevation certificates for new construction in the floodplain. Keeping certificates after the date of CRS application is required of all CRS communities.
- Map Information (Activity 320): Respond to inquiries about what FIRM zone a property is in and publicize this service.
- Outreach Projects (Activity 330): Send information about the flood hazard, flood insurance, and flood protection measures to residents.
- Hazard Disclosure (Activity 340): Advise potential purchasers of flood-prone property about the flood hazard or require a notice of the flood hazard.
- Flood Protection Library (Activity 350): The public library maintains references on flood insurance and flood protection.
- Flood Protection Assistance (Activity 360): Give inquiring property owners technical advice on how to protect their buildings from flooding and publicize this service.

Mapping and Regulation Activities

This series credits programs that provide increased protection to new development. The credit points for the activities in this series are increased for growing communities:

- Additional Flood Data (Activity 410): Develop new flood elevations, floodway delineations, wave heights or other regulatory flood hazard data for an area that was not mapped in detail by the flood insurance study; or have the flood insurance study based on a higher state or local standard.
- Open Space Preservation (Activity 420): Guarantee that currently vacant floodplain lands will be kept free from development; additional credit is given for areas still in, or restored to, their natural state.
- Higher Regulatory Standards (Activity 430): Require freeboard; require engineered foundations; require compensatory storage; zone the floodplain for minimum lot sizes of one acre or larger; have regulations to protect critical facilities, or have other standards for new construction that exceed the minimum NFIP requirements.
- Flood Data Maintenance (Activity 440): Keep flood and property data on computer records; use better base maps; or maintain elevation reference marks.

- Stormwater Management (Activity 450): Regulate new development throughout the watershed to ensure that post-development runoff is no worse than predevelopment runoff and/or protects or improves water quality.

Flood Damage Reduction Activities

This series credits programs for areas in which existing development is at risk. There is no CRS credit for new structural flood control measures because greater reductions in flood insurance rates are provided through the FIRM revision process.

- Floodplain Management Planning (Activity 510): Prepare, adopt and implement a comprehensive plan that addresses the community's flood problem, and evaluate and revise the plan annually.
- Acquisition and Relocation (Activity 520): Acquire and/or relocate flood-prone buildings so that they are out of the floodplain.
- Retrofitting (Activity 530) Protect flood-prone buildings through elevation, on-site barriers, or floodproofing.
- Drainage System Maintenance (Activity 540): Conduct periodic inspections of all channels and retention basins, and remove debris as needed.

Flood Preparedness Activities

This series is oriented toward preparing for and responding to a flood due to natural causes, a levee failure or a dam breach. They are usually coordinated by the community's emergency manager:

- Flood Warning Program (Activity 610) Provide early flood warnings to the public and have a detailed flood response plan keyed to flood crest predictions.
- Levee Safety (Activity 620): Maintain levees that are not reflected on the FIRM as providing base flood protection.
- Dam Safety (Activity 630): All communities in a state with an approved dam safety program receive credit.

SOURCE: *Managing Floodplain Development Through the NFIP*, Home study version (IS9) retrieved from ASFPM website <http://www.floods.org/Certification/is9/unit9.pdf> January 2005.

APPENDIX H: A Method for Evaluating Compliance in CRS Communities

The study team estimated that the CRS application process could take up to two years from the time a community applies until a community is admitted into the CRS; the CRS coordinator at headquarters agreed. In our analysis, we included all CAVs that each community received in the time since it entered the CRS (until April 2004) as well as any CAV each community received up to two years prior to the year it entered the CRS. Hence, when we state that a CRS community has not received a CAV, it means that the community did not receive a CAV in the time period beginning two years before the community entered the CRS up until August 2004.

The study team began its examination of CAVs in CRS communities by collecting records from the CIS. The study team then contacted representatives of the ten FEMA regional offices and requested that they check their paper files and notify the study team of CAVs conducted in CRS communities that were not entered into the CIS. The regional office staff often contacted the states in their regions for additional CAV records. Updates were made in response to data supplied by the regions (note: additional CAV data was acquired from all regions). Finally, FEMA headquarters contacted both ISO and the regions regarding two sets of AIR findings: (1) current CRS communities that had entered the CRS since 1998 and had not received a CAV and (2) current CRS communities with open CAVs in which serious program deficiencies had been noted. In response, ISO supplied FEMA, who in turn supplied the study team and the regions, with the CAV documentation that had been submitted regarding the list of communities that entered the CRS since 1998. The regions submitted updated data in response to both sets of AIR findings. The study team adjusted its findings accordingly. The study team completed its data collection by reviewing the records entered into the CIS and incorporating updates made since our data collection began.

The study team accepted a generous range of documents as proof of a CAV having occurred including (1) record of the CAV in the CIS; (2) a physical copy of a CAV report; (3) record of a letter sent FEMA to a community referencing a CAV that had occurred (note: the must have already been conducted by the date of the letter; the study team did not accept letters referencing CAVs that had been scheduled but not conducted by the date of the letter); or (4) a communication from the regional office or state to the study team giving the date of a CAV that had been conducted.⁵⁹

In conclusion, the study team made every attempt to ensure that all CAVs were included whether or not those CAVs had been recorded in the CIS. A few regions commented to the study team that they felt they knew of CAVs that were conducted in CRS communities; however, there was no physical record of the CAV having occurred and the region could not supply the date of the CAV. In those cases, the study team could not accept that a CAV had been conducted.

⁵⁹ The study team did not require additional documentation of a CAV if the regional office or state supplied a CAV date. This assumption of honest self-reporting may have the ultimate effect of underreporting the number of communities that have not received a CAV.

**APPENDIX I: CRS Communities that have not received a CAV
within Two Years before Program Entry**

CID	Community	PIF ¹	Total Insurance Coverage ¹	Class ²	CRS Entry Date ²
Region I					
230191	Alfred, ME	6	\$569,400	8	10/1991
230208	Arrowsic, ME	2	\$180,000	9	10/1993
230057	Farmington, ME	22	\$1,190,500	9	10/1994
230069	Hallowell, ME	40	\$4,313,200	9	10/1996
230178	Norridgewock, ME	25	\$2,642,600	9	10/1997
230293	Southwest Harbor, ME	21	\$3,635,000	9	10/1996
445401	Middletown, RI	89	\$18,849,600	8	10/1991
440022	Pawtucket, RI	96	\$8,705,500	8	10/2002
Region II					
340289	Bradley Beach, NJ Hackensack Meadowlands	136	\$22,665,800	7	10/1995
340570	Commission, NJ	1,097	\$172,253,900	8	10/1992
340246	Hamilton Township, NJ	634	\$82,116,500	8	10/1992
340467	Linden, NJ	195	\$32,636,800	8	10/1991
345307	North Plainfield, NJ	401	\$67,021,900	9	10/1992
340329	Spring Lake, NJ	448	\$106,402,300	8	10/1994
360772	Corning, NY	114	\$17,775,700	9	10/1991
360150	Elmira City, NY	283	\$27,089,900	8	10/1991
360151	Elmira Town, NY	77	\$8,772,200	9	10/1991
360153	Horseheads Town, NY	69	\$5,653,300	9	10/1991
360154	Horseheads Village, NY	26	\$2,382,600	9	10/1991
360932	Scarsdale, NY	115	\$27,149,500	8	10/1993
360156	Southport, NY	50	\$5,683,700	9	10/1991
360595	Syracuse, NY	187	\$12,102,800	9	10/1993
Region III					
421062	Etna, PA	161	\$14,034,100	8	10/1996
421134	Granville, PA	46	\$4,341,100	9	10/1993
420642	Jersey Shore, PA	471	\$29,211,800	9	10/1993
420612	Kingston, PA	62	\$9,737,700	9	10/1992
420687	Lewistown, PA	220	\$19,673,200	9	10/1993
425384	Milton, PA	409	\$42,414,100	8	10/1992
420754	Newport, PA	122	\$7,765,100	9	10/1994
421101	Shaler, PA	120	\$12,642,500	9	10/1994
421119	Upper St. Clair, PA	48	\$11,057,200	8	10/1998
510130	Roanoke, VA	614	\$99,942,200	9	10/1996
510053	Vienna, VA	46	\$9,250,500	9	10/1996
510005	Wachapreague, VA	106	\$13,413,200	9	10/1996
Region IV					
120636	Bal Harbour Village, FL	1,923	\$409,298,200	8	10/1996
120198	Cloud Lake, FL	14	\$2,109,700	8	10/1994
120643	Hialeah, FL	23,227	\$2,461,369,700	8	10/1993
120162	Jupiter Island, FL	432	\$133,933,000	8	10/1995
120190	Kissimmee, FL	768	\$108,881,200	8	10/1996
120211	Lake Clarke Shores, FL	213	\$44,903,000	9	10/1994
120213	Lake Worth, FL	1,863	\$302,103,700	9	10/1996
120214	Lantana, FL	993	\$144,421,600	9	10/1994
120292	Longwood, FL	296	\$54,664,100	9	10/1996
120656	North Miami Beach, FL	7,921	\$867,022,000	8	10/1993
120261	Polk County, FL	4,548	\$569,549,700	7	10/1992
120164	Sewalls Point, FL	394	\$112,359,800	8	10/1996
120658	South Miami, FL	1,544	\$254,398,400	8	10/1993
120659	Surfside, FL	2,463	\$419,389,100	8	10/1993
120300	Suwannee County, FL	273	\$26,250,900	8	10/1996
120302	Taylor County, FL	498	\$51,287,000	9	10/1996
130306	Douglas County, GA	48	\$9,799,600	8	10/1995
280096	Meridian, MS	433	\$40,490,600	8	10/1992

370268	Washington Park, NC	127	\$17,525,000	9	10/1992
470211	Athens, TN	24	\$1,947,200	9	10/1993
470176	Carthage, TN	93	\$8,771,300	8	10/1992
475425	Elizabethton, TN	162	\$16,065,700	9	10/1993
Region V					
170204	Downers Grove, IL	55	\$10,044,600	7	10/1991
170378	Lincolnshire, IL	118	\$28,884,400	5	10/1993
170132	Northbrook, IL	96	\$21,522,300	7	10/1994
170214	Oak Brook, IL	66	\$17,503,800	7	10/1992
170172	Orland Hills, IL	23	\$2,571,000	5	10/1996
180001	Decatur, IN	92	\$4,540,200	9	10/1993
275228	Austin, MN	115	\$10,622,300	5	10/1991
275240	Lake St. Croix beach, MN	32	\$4,143,800	8	10/1995
390328	Licking County, OH	140	\$17,732,400	8	10/1993
390176	Obetz, OH	26	\$3,775,900	9	10/1996
390419	West Carrollton, OH	424	\$34,400,700	9	5/2002
550612	Allouez, WI	131	\$16,257,200	7	10/1992
550128	Eau Claire, WI	93	\$7,910,200	8	10/1991
550085	Mazomanie, WI	23	\$2,288,300	9	10/1991
550537	Winnebago County , WI	341	\$38,417,600	8	10/1991
Region VI					
050140	Blytheville, AR	105	\$11,169,800	9	10/1995
220220	Houma, LA	2,929	\$370,464,000	9	10/1992
220036	Shreveport, LA	3,879	\$465,857,700	8	10/1991
350045	Alamogordo, NM	1,113	\$81,484,300	9	10/1991
350002	Albuquerque, NM	1,407	\$172,488,200	8	10/1993
350001	Bernalillo County, NM	426	\$57,171,700	9	10/1993
350010	Clovis, NM	447	\$35,961,000	9	10/1991
350067	Farmington, NM	92	\$22,577,100	9	10/1991
350029	Hobbs, NM	712	\$53,448,600	8	10/1992
350006	Roswell, NM	862	\$55,631,800	9	10/1992
480289	Bellaire, TX	3,094	\$729,698,500	9	10/1993
480484	Conroe, TX	557	\$98,018,000	7	10/1992
480173	Duncanville, TX	168	\$23,402,900	8	10/1991
485472	Grand Prairie, TX	196	\$36,074,300	8	10/1991
480601	Hurst, TX	199	\$28,397,100	8	10/1992
480195	Lewisville, TX	80	\$15,521,400	7	10/1991
480607	North Richland Hills, TX	185	\$26,111,000	7	10/1991
480140	Plano, TX	378	\$84,275,400	6	10/1992
480184	Richardson, TX	215	\$40,125,900	8	10/1991
480502	Sweetwater, TX	13	\$1,631,700	9	10/1991
485513	Taylor Lake Village, TX	942	\$213,905,200	8	10/1996
480662	Wichita Falls, TX	1,073	\$138,164,400	9	10/1991
Region VII					
No Communities					
Region VIII					
300142	Yellowstone County, MT	80	\$11,128,500	8	5/2003
Region IX					
040037	Maricopa County, AZ	1,441	\$262,604,400	5	10/1991
040073	Pima County, AZ	2,099	\$328,547,800	6	10/1991
Region X					
No Communities					

¹ As of December 2003

² Current as of May 2004

SOURCE: FEMA BSA (PIF, Total Insurance Coverage); May 2004 Insurance Manual (Current Class, Date of CRS Entry)

11. ACRONYMS AND GLOSSARY

ASFPM—Association of State Floodplain Managers

Base flood—The flood having a 1 percent chance of being equaled or exceeded in any year.

Base flood elevation (BFE)—The elevation shown on the Flood Insurance Rate Map that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

CAC—community assistance contact

CAP—Community Assistance Program

CAV—community assistance visit

Community--A political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

Community Rating System (CRS)—A program developed by FEMA to provide incentives for those communities that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

DHS—Department of Homeland Security

Date of construction—The date that the building permit was issued provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit date.

Elevated building—A building that has no basement and has its lowest elevated floor raised above the ground level by foundation walls, shear walls, posts, piers, pilings, or columns. Solid foundation perimeter walls are not acceptable for elevating buildings in V and VE zones.

Enclosure—That portion of an elevated building below the lowest elevated floor that is either partially or fully shut-in by rigid walls.

Federal Emergency Management Agency (FEMA)—The federal agency under which the National Flood Insurance Program is administered.

Federal Insurance Administration (FIA)—The federal entity within FEMA that directly administers the National Flood Insurance Program (now FIMA, the Federal Insurance and Mitigation Administration)

Flood—A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waters; or unusual and rapid accumulation or runoff of surface waters from any source; or mudflow; or collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above.

Flood Hazard Boundary Map (FHBM)—Official map of a community issued by the Administrator, where the boundaries of the flood, mudflow, and related erosion areas having special hazards have been designated.

Flood Insurance Rate Map (FIRM)—Official map of a community on which the FIA Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community.

Floodplain—Any land area susceptible to being inundated by flood waters from any source.

Floodplain management—The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to, emergency preparedness plans, flood control works, and floodplain management regulations.

Floodproofing—Any combination of structural and nonstructural additions, changes, or adjustments to structures, which reduce or eliminate risk of flood damage to real estate or improved real property, water and sanitation facilities, or structures with their contents.

Freeboard—An additional amount of height (e.g., 2 feet) above the base flood elevation used as a factor of safety in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with State or community floodplain management regulations.

FTE—Full Time Employee

FY—Fiscal Year

GAO—U.S. Government Accountability Office

GIS—Geographic information system

HMGP—Hazard Mitigation Grant Program

Historic building—Any building that is listed in the National Register of Historic places maintained by the Department of the Interior or on approved state or local registers, or preliminarily determined by the Secretary of the Interior as meeting the requirements for such listing on the National Register; or is contributing to the historical significance of a historic district

Improvements—Fixtures, alterations, installations, or additions comprising a part of the insured building, including the units within the insured condominium building.

Increased Cost of Compliance—Coverage for expenses a property owner must incur, above and beyond the cost to repair the physical damage the structure actually sustained from a flooding event, to comply with mitigation requirements of State or local floodplain management ordinances or laws. Acceptable mitigation measures are elevation, floodproofing, relocation, demolition, or any combination thereof.

Letter of Map Revision (LOMR)—An official amendment to the currently effective FEMA map. It is issued by FEMA and changes flood zones, delineations, and elevations.

Lowest floor—The lowest floor of the lowest enclosed area (including a basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building’s lowest floor provided that such enclosure is not built so as to render the structure in violation of requirements.

Mandatory purchase—Under the provisions of the Flood Disaster Protection Act of 1973, individuals, businesses, and others buying, building, or improving property located in identified areas of special flood hazards within participating communities are required to purchase flood insurance as a prerequisite for receiving any type of direct or indirect federal financial assistance (e.g., any loan, grant, guaranty, insurance, payment, subsidy, or disaster assistance) when the building or personal property is the subject of or security for such assistance.

Manufactured (mobile) home—A structure built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation. “Manufactured (mobile) home” does not include recreational vehicles.

Map revision—A change in the FHBM or FIRM for a community which reflects revised zone, base flood, or other information.

National Flood Insurance Fund—Established in the U.S. Treasury by the National Flood Insurance Act of 1968 as the funding mechanism of the NFIP. Premiums collected are deposited into the fund, and losses, operating, and administrative costs and, since 1986, federal salaries and mapping costs are all paid out of the NFIF.

National Flood Insurance Program (NFIP)—The program of flood insurance coverage and floodplain management administered under the Act and applicable Federal regulations promulgated in Title 44 of the Code of Federal Regulations, Subchapter B.

New construction—Buildings for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, including any subsequent improvements.

NFIP Bureau and Statistical Agent—A corporation, partnership, association, or any other organized entity that contracts with the Federal Insurance Administration to be the focal point of support operations for the NFIP.

Nonresidential—Includes, but is not limited to: small business concerns, churches, schools, farm buildings (including grain bins and silos), poolhouses, clubhouses, recreational buildings, mercantile structures, agricultural and industrial structures, warehouses, hotels, and motels with normal room rentals for less than 6 months’ duration, and nursing homes.

OMB—Office of Management and Budget

Participating community—A community for which the FIA Administrator has authorized the sale of flood insurance under the NFIP.

Policy—The entire written contract between the insured and the insurer.

Post-FIRM building—a building for which construction or substantial improvement occurred after December 31, 1974, or on or after the effective date of an initial Flood Insurance Rate Map (FIRM), whichever is later.

Pre-FIRM building—a building for which construction or substantial improvement occurred on or before December 31, 1974, or before the effective date of an initial Flood Insurance Rate Map (FIRM).

Probation—A means of formally notifying participating communities of violations and deficiencies in the administration and enforcement of the local floodplain management regulations.

Regular Program—The final phase of a community’s participation in the National Flood Insurance Program. In this phase, a Flood Insurance Rate Map is in effect and full limits of coverage are available under the Act.

Repetitive loss structure—A structure, covered by a contract of flood insurance issued under the NFIP, that has suffered flood damage on two occasions during a 10-year period that ends on the date of the second loss, in which the cost to repair the flood damage, on average, equaled or exceeded 25% of the market value of the structure at the time of each flood loss.

Section 1316—Section of the National Flood Insurance Act of 1968, as amended, which states that no new flood insurance coverage shall be provided for any property that the Federal Insurance Administrator finds has been declared by a duly constituted state or local zoning authority or other authorized public body to be in violation of state or local laws, regulations, or ordinances that are intended to discourage or otherwise restrict land development or occupancy in flood-prone areas.

Special Flood Hazard Area (SFHA)—An area having special flood, mudflow, or flood-related erosion hazards, and shown on a Flood Hazard Boundary Map or a Flood Insurance Rate Map as Zone A, AO, A1-A30, AE, A99, AH, AR, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V1-V30, VE, or V. For the purpose of determining Community Rating System premium discounts, all AR and A99 zones are treated as non-SFHAs.

Submit-for-Rate—An application for flood insurance on a building for which no risk rate is published in the *Flood Insurance Manual*. Insurance coverage can be obtained only after the NFIP has approved the application and has established the risk premium rate.

Substantial damage—Damage of any origin sustained by a building whereby the cost of restoring the building to its before-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred.

Substantial improvement—Any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the “start of construction” of the improvement. Substantial improvement includes buildings that have incurred “substantial damage,” regardless of the actual repair performed.

Suspension—Removal of a participating community from the NFIP because the community has not enacted and/or enforced the proper floodplain management regulations required for participation in the NFIP.

Variance—A grant of relief by a participating community from the terms of its floodplain management regulations.

Vents—(sometimes called “proper openings” or “flood vents”) All enclosures below the lowest elevated floor of a building in A Zones must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. The bottom of all openings must be no higher than 1 foot above grade.

Write Your Own (WYO) Program—A cooperative undertaking of the insurance industry and the Federal Insurance Administration begun in October 1983. The WYO Program operates within the context of the NFIP and involves private insurance carriers who issue and service National Flood Insurance Program policies.

Zone—A geographical area shown on a Flood Hazard Boundary Map or a Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

Source: <http://www.fema.gov>

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