

USING MITIGATION PLANNING TO REDUCE DISASTER LOSSES

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ABSTRACT: The U.S. Federal Emergency Management Agency (FEMA) has been implementing the Disaster Mitigation Act of 2000 in part by requiring State, Indian tribal, and local governments to develop mitigation plans that identify their risks from natural hazards and that include mitigation strategies to reduce those risks. FEMA published regulations in February of 2002 that establish the baseline requirements for these plans. These requirements provide an opportunity for State, local, and Indian tribal governments to take a new approach to mitigation planning, looking at all natural hazards, coordinating with other, ongoing planning activities, and reaching out to new constituencies. These mitigation plans require comprehensive risk and capability assessments that form a solid foundation for decision-making, and they ask for input from a wide range of stakeholders who would play a role during implementation of recommended mitigation actions at the Federal, State, and local levels. Mitigation plans are required as a condition of receiving mitigation project grant funds as well as certain forms of disaster assistance. As of March 31, 2008, 48 States have approved State level mitigation plans, 42 Indian tribal governments have approved State-level plans, and over 16,000 local and Indian tribal communities are covered by local level plans. These plans must also be updated on a regular basis to ensure that the risk assessment data and the mitigation strategy are current. Much effort is spent on developing and reviewing the mitigation plans, and it is important to ensure that they provide the information necessary to reduce disaster losses.

Key Words: Mitigation, Planning, Risk, Disaster

1. INTRODUCTION

Hazard mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation activities may be implemented prior to, during, or after an incident. However, we believe that hazard mitigation is most effective when it is based on an inclusive, comprehensive, long-term plan that is developed before a disaster actually occurs. Disasters often create opportunities for mitigation through stronger and smarter re-building; however, without consideration of all options, effects and contributing factors, the results of the mitigation can be less effective. The primary purpose of mitigation planning is to bring the community together to identify policies, actions, and tools for implementation over the long term that will reduce risk and potential future losses.

Flooding is the number one risk in the United States resulting in the greatest losses. The National Flood Insurance Program (NFIP) is managed by FEMA and it involves mapping the flood hazard, floodplain management, and flood insurance. The maps produced through this program are an invaluable resource

in the mitigation planning process, and the mitigation plans developed through this process can help communities better manage their floodplains.

1.1 Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 provided FEMA with an opportunity to strengthen mitigation planning across the United States. This allowed FEMA to establish, for the first time, national guidelines on developing mitigation plans. We published regulations in February 2002 that outlined the requirements for State, local and Indian tribal government mitigation planning. As part of the implementation process, FEMA hosted workshops at each of our 10 FEMA Regions, inviting State Mitigation Officers to attend. This allowed us to present a consistent message across the nation. The planning process we established requires four main steps:

1. Organizing resources and building support for mitigation planning;
2. Understanding risk by identifying hazards and estimating potential losses;
3. Developing the plan by identifying mitigation goals and strategies; and
4. Bringing the plan to life by implementing the identified actions.

In order to remain effective, State level plans must be reviewed and updated on a three-year cycle, while local and tribal plans must be updated every five years. FEMA reviews and approves both State and local plans after they have been adopted by the appropriate jurisdictions. FEMA requires approved plans before a jurisdiction can receive any of FEMA's mitigation project grant funding.

1.2 Guidance Materials

The plan is a documentation of the process, and the success of the plan will depend upon whether or not the process is comprehensive and inclusive. We have heard anecdotally that communities engaged in the mitigation planning process have forged new working relationships with other agencies and organizations within the community as a result of this planning. In order to promote mitigation planning, FEMA has developed a series of "Planning How-to Guides" for each step of the planning process. We have also developed several planning guides for special topics. All of these publications can be ordered through the FEMA Publications Warehouse at 800-480-2520 or online at FEMA's Information Resource Library <http://www.fema.gov/library/index.jsp>. These planning guides are:

- FEMA's How-to Guide #1: Getting Started: Building Support for Mitigation Planning discusses how to capitalize on the existing resources within the community to get started in the planning process, identifying contacts and resources that will be important throughout the process. The first step in developing a mitigation plan is to establish the planning area, the extent of the plan, and to assess community support for the process. It is important to create a planning team that is composed of dedicated and interested individuals representing all aspects of the jurisdiction, such as agency officials, non-profit groups, community organizations, and businesses.
- Understanding risk is often the most difficult component of the planning process for many communities. It can be fairly easy to identify the range of hazards that might affect a jurisdiction, and perhaps even to determine the frequency and extent of each hazard. However, establishing an inventory of assets that may be affected by a hazard and estimating potential losses can be more difficult. We have developed a how-to guide #2 titled: Understanding Your Risks – Identifying Hazards and Estimating Losses that can help with this effort.
- Outlining the process of developing the mitigation plan is the topic of How-to Guide #3: Developing the Mitigation Plan – Identifying Mitigation Actions and Implementation Strategies.

This guide focuses on what should be included in a mitigation plan, ensuring that mitigation goals, strategies, and actions are based on the hazards and vulnerabilities that have been identified. The mitigation actions should lead to a reduction of future loss when/ if they are implemented. The plan should also discuss an implementation strategy and identify the process for keeping the plan up to date.

- Bringing the Plan to Life, How-to Guide #4, completes the general guidance by discussing plan adoption, implementation of the plan's recommendations, evaluation of the results of the actions, and revision and updating of the plan.
- Our first special topic How-to Guide is #5: Using Benefit Cost Review in Mitigation Planning. This guide provides assistance in evaluating the actions identified in the mitigation strategy based on the benefits they provide against the cost of implementing them. The plan does not require that a complex benefit to cost analysis be done for each action, but it does require ranking of projects based in part on those actions that maximize benefits.
- Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning is our How-to Guide #6, which assists local jurisdictions in addressing the special considerations necessary to address risk and mitigation for these special resources.
- While FEMA only requires that natural hazards be address in the mitigation plans, we recognize that many communities want to address technological hazards and terrorism threats in their plan. The special topic How-to Guide #7: Integrating Human-Caused Hazards into Mitigation Planning covers these issues.
- Multi-Jurisdictional Mitigation Planning is the special topic covered under How-to Guide #8. Many communities find it easier to address the planning requirements by developing a multi-jurisdictional plan and this guide addresses some of the issues confronting communities who participate in this processes.
- Our newest planning guide, How-to #9: Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects focuses on how to make the transition from actions identified in the plan to actual mitigation projects.

These guidance documents have provided basic tools for States, Indian tribal governments, and local jurisdictions in addressing FEMA's mitigation planning requirements. In addition to the How-to guides, FEMA has developed training courses on plan development, joint publications with the American Planning Association on incorporating sustainability issues into mitigation planning, and guidance on incorporating mitigation planning into the disaster recovery. We recognize that, as new issues arise and we gain more experience in developing and updating mitigation plans, additional guidance, tools, job-aids, and training will be necessary in supporting our partners in this process.

2. WHERE WE ARE TODAY

By May 1, 2005, every State had met the planning requirement and had an approved Mitigation plan meeting the requirements established by FEMA under the Disaster Mitigation Act of 2000. Although, as of March 31, 2008, two State plans have lapsed, most have also gone through one update cycle, meeting the need to revise and update the plans every three years. The States use the plan update process to document their progress, identify areas that need improvement, and increase the accuracy of their risk assessment and other data. The U.S. Territories (American Samoa, Commonwealth of the Northern Mariana Islands, Guam, Puerto Rico, and the Virgin Islands) are included as States in this process. While it can be challenging for some of these jurisdictions to develop plans due to widely varying geographic areas and cultural differences, every U.S. Territory has also met the planning requirement. Federally recognized Indian tribal governments, as sovereign nations, are also required to

develop a mitigation plan in order to receive FEMA mitigation grants and some disaster assistance support. As of March 31, 2008, 42 Indian tribal governments have approved mitigation plans.

This planning effort, for the first time, establishes a national standard for mitigation planning. We have been working closely with States and national level planning organizations to ensure that areas that are vulnerable to natural hazards have the information and resources necessary to develop mitigation plans. As of March 31, 2008, over 16,000 local jurisdictions are covered by mitigation plans. This equates to approximately 65% of the population of the United States. Many of these jurisdictions are working on revising and updating their plans to meet the 5-year update requirement. Figure 1 shows the rate of local plan development and approval.

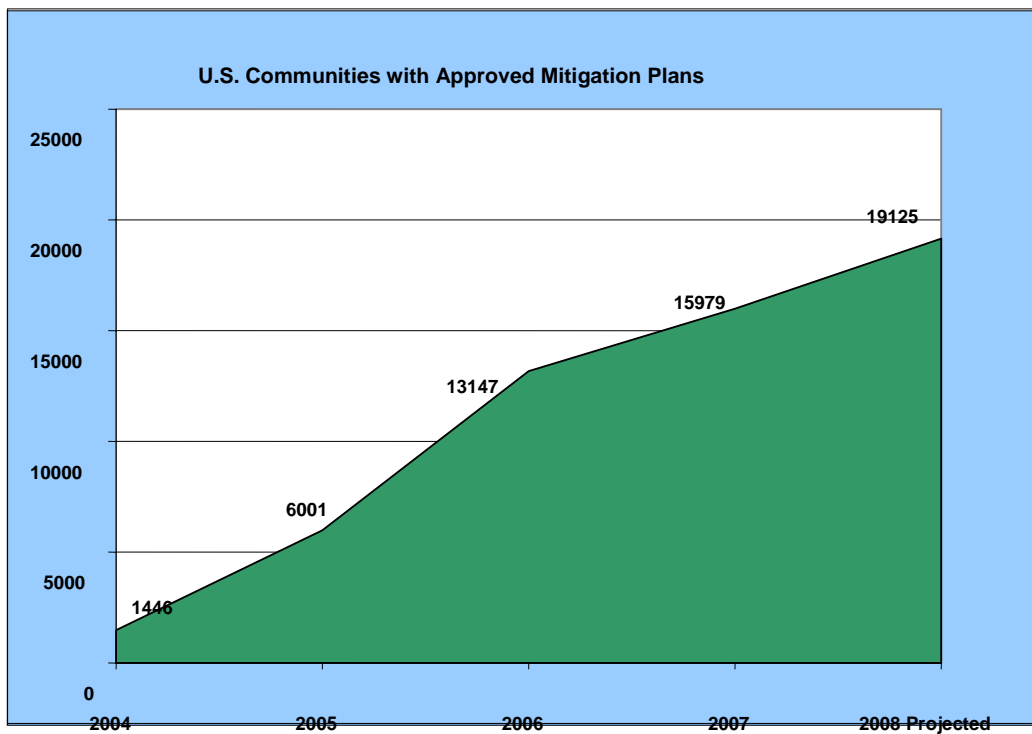


Figure 1: Local Plan Approvals

3. CHALLENGES AND OPPORTUNITIES

We have made tremendous progress in understanding our risks from natural hazards, and in identifying actions to reduce those risks through the mitigation planning process, but there are many challenges before us. While hazard mitigation planning is traditionally the responsibility of the local emergency management coordinator, community and city planners are responsible for a wide variety of other local planning activities. Unfortunately, there is often a serious disconnect between hazard mitigation planning and other types of community planning. Hazard mitigation planning should be better integrated into the following types of local planning activities:

- Community visioning and goals and objectives activities

- Planning of all types
 - comprehensive, master, or general plans
 - sub-area plans, such as specific plans, neighborhood plans, corridor plans, downtown plans
 - functional plans, such as plans for sewer, water, transit, housing, open space
- Land-use management tools, such as zoning, subdivision, planned unit development, and form-based codes.
- Review and approval of development projects
- Capital improvements programming, including public investments in infrastructure, public buildings, and facilities

In order to make hazard mitigation a truly integral part of these other planning activities and daily local government decision-making, there is a need for additional guidance and educational products. This assists communities in ensuring that their other local planning activities have meaningful hazard mitigation components that tie into the local mitigation plan. This linkage is critical because other types of local plans lead to action and implementation measures that may either support or conflict with hazard mitigation. Planning directors, city managers, and other public officials benefit from guidance on how to improve integration of disaster mitigation into the full range of planning activities they engage in at the local level. FEMA is working with the American Planning Association to identify best management practices from communities throughout the United States, documenting successful integration of mitigation planning into other ongoing community planning efforts. Planning for a Sustainable Future (FEMA 364) also provides guidance for integrating sustainable practices as part of mitigation planning efforts.

In addition, we must ensure that the mitigation plans are relevant, that they contain the best risk and vulnerability data, and most importantly, that they are implemented. We are working on providing guidance and tools to assist States and communities in using their plans to develop applications for mitigation projects and to document progress on implementation of their actions. Communities that revise and update their plans are encouraged to document their successes and to identify where improvements in their mitigation strategy can be made. FEMA cannot mandate the development of the mitigation plans; although we do have an interest in ensuring that the most vulnerable communities have plans. The plans are a requirement for receiving FEMA mitigation project grants, but we anticipate that jurisdictions will understand the benefits that the plan and the planning process can achieve. Figure 2 demonstrates the area covered by local mitigation plans, as of December 31, 2007.

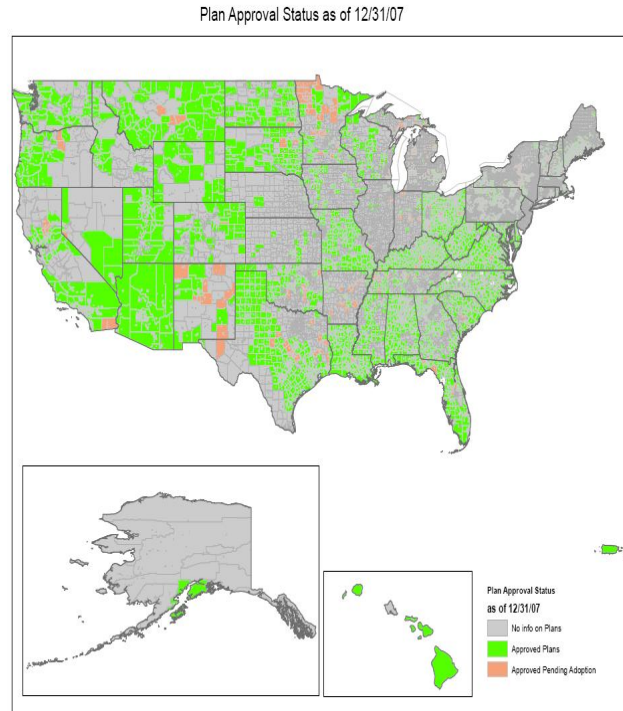


Figure 2: Plan Approval Status

4. WHERE DO WE GO FROM HERE?

The next steps for policymakers in the United States is to demonstrate the effectiveness of mitigation plans at the State, local and Indian tribal level through reduced risks and cost avoidance. The successful implementation of this national planning program is through:

- A documentation of the actual reduction in damages from events; and
- Demonstration of continuous improvement in mitigation plans that improve local communities' ability to mitigate risks prior to a hazard event.

The Mitigation planning process has already proven its value by bringing together diverse members of the community to anticipate risks and develop a common understanding of how to prepare and respond. We anticipate the continued improvement of these plans and their validation through the identification and documentation of real reductions in losses resulting from their implementation. An independent study conducted by the Multihazard Mitigation Council of the National Institute of Building Sciences released a report in December 2005. The report found that for every dollar spent on mitigation, society saves an average of four dollars in reduced future losses, and that mitigation is sufficiently cost-effective to warrant continued federal funding both before disasters, and during post-disaster recovery. History shows that the physical, financial, and emotional losses caused by disaster can be reduced significantly through mitigation planning. Mitigation focuses attention and resources on solving a particular problem (such as reducing repetitive flood losses), and thereby produces successive benefits over time. Through implementation of local floodplain ordinances, for example, it is estimated that \$1.1 billion in flood damages are prevented annually. In conclusion, the mitigation planning process should lead to implementation of better mitigation projects, those based on the best available risk data and building on community support for the identified solutions.