



State Mitigation Planning Key Topics Bulletins: Mitigation Strategy

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Cover Image: Hurricane repairs to homes after Hurricane Sandy included elevating their utilities. Image: Liz Roll/FEMA, Mystic Island, New Jersey

INTRODUCTION

The Federal Emergency Management Agency (FEMA) released a new [State Mitigation Plan Review Guide](#) (the Guide) in March 2015. This Guide, which became effective March 6, 2016, presents FEMA’s official policy on and interpretation of the natural hazard mitigation planning requirements for states established in the Code of Federal Regulations (44 CFR Part 201). The State Mitigation Planning Key Topics Bulletins (“Bulletins”) are a series of brief documents aimed at informing states on how to meet the regulatory and policy requirements described in the Guide. The series covers all components of the mitigation planning process. The Bulletins are not intended to clarify policy, but instead to provide state officials approaches and resources for updating state hazard mitigation plans.



FEMA Hazard Mitigation Specialists Larry Koski (left) and Michael Connor (right) discuss options for protecting Nashville's historical Omohundro Treatment Plant from future floods with Metro Water Services Industrial Maintenance Supervisor Glen K. Doss (center). Image: Mike Osborne/FEMA, Nashville, TN

MITIGATION STRATEGY OVERVIEW

The state mitigation strategy brings together all of the previously completed planning tasks into a comprehensive action plan for reducing risk and losses. The development of the risk assessment, the inclusion of planning partners, and the evaluation of mitigation capabilities all inform the development of the mitigation strategy. The mitigation strategy sets the state's mitigation program priorities and helps guide local communities as they update their plans by establishing mitigation goals and short- and long-term actions.

The mitigation strategy must include goals (i.e., long-term policy statements and global visions that support the mitigation program), identify hazard mitigation actions, and establish a strategy to implement those actions. The mitigation strategy uses risk-based information to identify the goals and actions that will alleviate vulnerabilities and prevent losses. It is imperative to tie the mitigation strategy to the risk assessment, as this will ensure that the state is taking steps to address the hazards most likely to cause loss of life and/or property in the state, both now and in the future. The mitigation strategy should also be rooted in the state's mitigation capabilities, meaning that the state needs to consider whether it has the government authorities, policies, programs, staff, funding, and resources available to accomplish mitigation actions. The mitigation goals and actions provide an opportunity to fill identified gaps and enhance strengths with new or updated activities needed to accomplish mitigation and reduce long-term vulnerability.

An important component of updating the state's mitigation strategy is the consideration and inclusion of the local and, if applicable, tribal mitigation plan strategies. By reviewing, prioritizing, and incorporating the types or categories of actions identified by communities, the state can better understand how to support investments in community-level mitigation efforts. The review and inclusion of these strategies will ensure the state is positioned to provide appropriate resources and support when available, whether that is before or after a disaster event.

CREATING A RISK-BASED MITIGATION STRATEGY

During the plan update process, the state identifies and profiles hazards, analyzes vulnerabilities, and performs a capability assessment. The mitigation strategy directly addresses those risks and vulnerabilities as well as the findings of the capability assessment through the development of mitigation actions.

STEPS TO UPDATE THE STATE MITIGATION STRATEGY

Each state can develop its own process to update the mitigation strategy, but every mitigation strategy should be based on the state's risk and capability assessment. The general steps to update the state mitigation strategy include:

- Validating mitigation goals;
- Reviewing, evaluating and updating existing mitigation actions;
- Identifying any new mitigation actions;
- Prioritizing all mitigation actions; and,
- Identifying current and appropriate funding sources.

Each of these elements represents a critical step in ensuring the state has a sound mitigation strategy that helps reduce its vulnerability.

Step 1: Validate Mitigation Goals

Mitigation goals are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy. The goals represent what the state seeks to accomplish through mitigation plan implementation, and need to be directly tied to the hazards and vulnerabilities in the risk assessment. Specifically, mitigation goals must address the vulnerability of populations and communities within the state, as well as the vulnerability of the state assets identified in the risk assessment, including state-owned or operated buildings, infrastructure, and critical facilities.

Because all states have an approved hazard mitigation plan, the process of setting goals will focus on reviewing the previous plan's goals and making adjustments as needed to reflect changes in identified hazards and vulnerabilities. Consider the following questions when reviewing and validating the state hazard mitigation plan goals:

- Did the goals in the previously approved plan lead to mitigation projects and/or changes in policy that reduce risk?
- Are the goals long-term (i.e., not limited to the next five years) and applicable to both current vulnerabilities and probable future hazard events?
- Do the goals reflect the updated risk assessment?
- Do the goals support any changes in mitigation capabilities?
- Do the goals conflict with any other state-level initiatives or priorities? Better yet, do the goals support other state-level agendas, initiatives, or priorities?

These questions will help the planning team determine if the previously approved plan's goals are sufficient, if new goals should be added, and where changes should be made.

While not required, states can also opt to use objectives to help define strategies or implementation steps needed to attain the identified goals. Objectives can act as a stepping stone between the big picture goals and the specific actions. If a state decides to use objectives, they should be S.M.A.R.T: specific, measurable, achievable, realistic, and time-bound. This means that the objectives should be directly connected to the state's capabilities and to the time frame of the plan; objectives will not help define or organize mitigation activities if they are not rooted in reality. As is the case with the goals, previous plan objectives should be reviewed and changed as needed to reflect state capabilities.

STATE OBJECTIVES SHOULD BE:

S.M.A.R.T. = specific, measurable, achievable, realistic, and time-bound

Step 2: Review, Evaluate, and Update Mitigation Actions

All states have existing mitigation actions in their approved plans. The plan updating process involves evaluating any progress made or successes since the previous mitigation strategy was created and making changes as needed to reflect current capabilities, risks, and mitigation needs. When reviewing the actions of the previous strategy and considering updates to those actions, the planning team should review relevant changes in current and future hazard conditions, determine development patterns and pressures within the state, and review any changes in the disaster history. The planning team should also use the results of the capability assessment and Threat and Hazard Identification and Risk Assessment to identify whether changes in capabilities impact the state's ability to implement the previously stated actions.

Once risks and capabilities have been reviewed, the planning team must complete a comprehensive review to identify and describe the status of any mitigation actions contained in the previously approved state hazard mitigation plan. States should indicate which actions are completed, in progress, deferred, or discontinued. Mitigation actions that were not completed in the previous planning cycle, but are in process and still relevant, should be accompanied by a narrative explaining the status of the action. Deferred actions are those that may still align with state goals, risks, and capabilities, but could not be completed in the previous cycle. When actions have been deferred, the reason for deferment should be described in the plan. Actions that are no longer applicable, or no longer fit with state goals, should be removed from the plan and the reason for removal should be documented. The mitigation planning team and any previously identified lead agencies should contribute to the decision regarding the removal of these actions.

Step 3: Develop New Mitigation Actions

Because hazard impacts, mitigation capabilities, and mitigation goals and objectives may change over time, states may need to identify new mitigation actions. Mitigation actions can include, but are not limited to, a process, activity, or a physical project. They can be large-scale, multi-year projects, ongoing efforts that continue to reduce risk or raise risk awareness, or single, targeted actions for a state-owned or operated facility. Mitigation actions can come from a variety of different sources, like members of the planning team, stakeholders, or other state risk reduction efforts.

As discussed in the overview, mitigation actions should clearly connect to the risk assessment. The risk assessment will identify new or changed vulnerabilities, or it may identify areas where the probability of future hazard events or other changing conditions could increase vulnerability. Where these changes have occurred or have a high probability of occurring in the future without mitigation, states may need to add new mitigation actions. For example, if the risk assessment indicates a levee system is no longer accredited, the mitigation strategy could propose actions that will reduce the risk of damage to state-owned or leased facilities located behind the levee, like floodproofing or elevating the structures. If the risk assessment indicates that the probability of long-term droughts will increase in the future, the state should add mitigation actions to alleviate the impacts of droughts, like developing statewide water

LEVERAGE THE PLANNING TEAM AND STAKEHOLDERS

The planning team and other stakeholders are uniquely qualified to assist in reviewing the previous mitigation strategy, especially those members who were assigned as the lead agency or implementing authority in the previous plan.

The planning team should assist in determining which aspects of the previous mitigation strategy are still relevant, and what should be included in the plan update. Collaboration during this process not only allows for the development of these relationships, but also identifies possibilities for integrating mitigation strategies across plans and initiatives. For example, mitigation actions may be identified in plans that other state agencies administer, like climate adaptation plans, drought action plans, or other hazard-specific efforts. These actions should be reviewed and integrated into the updated mitigation strategy. The planning team members may also identify areas where the mitigation strategy can be applied to programs and activities within their own departments or agencies.

conservation tools and trainings. Using the risk assessment to guide the mitigation strategy will ensure that the state is taking action directed at addressing the most vulnerable areas.

Mitigation activities can be developed to address gaps described in other sections of the state hazard mitigation plan. Actions can address data deficiencies noted in the risk assessment or gaps identified in the state mitigation capabilities assessment. For example, if the capability assessment indicates that the state does not have training capabilities to support local or tribal planning, a mitigation action could be proposed to develop and implement a train-the-trainer program to increase capabilities. By addressing gaps in the existing situation, the state is taking steps to improve its ability to implement mitigation and, therefore, decrease its overall vulnerability to hazards. That reduction in vulnerability at the state level can then be mirrored by communities. They review the state plan during their own planning process, creating a ripple effect that allows the state mitigation strategy to influence vulnerabilities beyond state assets.

Step 4: Develop the Details and Prioritize Mitigation Actions

Implementable mitigation actions require more than just the statement of activity. More than likely, mitigation actions will be led by different agencies and entities, have different levels of effort, and varied resource needs. Activity details are important to ensure the planning team and other state partners have sufficient information to effectively expand and increase collaboration in implementing mitigation. States may want to organize their actions into an action plan that identifies details such as:

- Timeline or completion date;
- Goal(s) addressed;
- Hazard(s) addressed;
- Lead agency;
- Support agencies;
- Available resources;
- Action category; and
- Funding sources.

In addition to having defined implementation details, all mitigation actions, both new and those carried over from the previous plan, must be prioritized. This prioritization must be based on the updated risk analysis, state capabilities, and any progress made on the previously identified actions. While undertaking this process, the planning team should take the time to examine what worked previously and make changes accordingly.

STATE MITIGATION ACTIONS

FEMA defines four primary kinds of mitigation action to reduce long-term vulnerabilities:



Plans and regulations

include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.



Structure and infrastructure projects

involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.



Natural systems protection projects

minimize losses while also preserving or restoring the function of natural systems.



Education and awareness programs

include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.

State plans can also incorporate actions that will increase capabilities, encourage partnerships, develop data, and aid and assist communities in mitigation planning and action implementation.

Some sample evaluation criteria include:

- Life safety;
- Property protection;
- Technical feasibility;
- Political will;
- Legal authority;
- Environmental soundness;
- Social acceptability; and
- Administrative capability.

State planning teams may also want to prioritize actions that address multiple hazards, actions that protect new and existing structures from future hazard conditions, actions that protect continuity of operations or government, actions that address critical facilities or infrastructure, or actions that reduce vulnerability from the highest risk hazards. The planning team should choose a method best suited to the state's specific needs. Each state has different risk reduction goals and there is no set criteria for prioritizing actions beyond cost-effectiveness, environmental soundness, and technical feasibility. Whatever evaluation criteria that the planning team chooses to use, the prioritization criteria and process must be described within the mitigation strategy. Ultimately, each action should relate back to the mitigation goals and the vulnerabilities.

Step 5: Identify Funding Sources

The next step is to determine current and/or potential funding opportunities for each of the identified actions. By designating funding sources now, states are poised to complete the identified actions as funding opportunities arise. Mitigation activities are implemented through a variety of funding streams. Identified funding sources must identify, at a minimum, FEMA mitigation funding sources including, if applicable, the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation (PDM) program, the Flood Mitigation Assistance (FMA) program, and Public Assistance Section 406 grants that may become available post-disaster. It is important to research and leverage other available funding opportunities and not limit the sources to FEMA assistance programs. Funding opportunities may include other federal agencies, state, local, and tribal programs, as applicable, or private funding. Any funding and technical resources that can be used to implement mitigation and encourage resilience should also be included in the plan.

FEMA HAZARD MITIGATION ASSISTANCE

FEMA manages the HMGP, PDM, and FMA programs under its Hazard Mitigation Assistance (HMA) program. These funding streams may be matched to pre- and post-disaster conditions for mitigation projects, the development or update of hazard mitigation plans, and management costs. HMGP funding can also be used for planning-related activities that do not result in an approvable mitigation plan. Instead, they focus on updating or enhancing sections of a FEMA-approved mitigation plan (e.g., updating the risk assessment based on new data or strengthening the mitigation strategy), integrating information from mitigation plans with other planning efforts, building capability

REPETITIVE LOSS STRATEGY AND FEDERAL FLOOD MITIGATION ASSISTANCE

States can qualify for an increased federal cost share in FEMA's Flood Mitigation Assistance Grant Program by including a Repetitive Loss Strategy. The federal share can increase from a 75 percent federal share to as much as 90 percent. To qualify for this increase, states must:

- Address Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties in the risk assessment;
- Address RL and SRL properties in the mitigation goals;
- Include mitigation actions that address RL and SRL properties;
- Identify current and potential funding sources that can be used to mitigate RL and SRL properties;
- Address RL and SRL properties in the description and analysis of the effectiveness of local and tribal, as applicable, mitigation policies, programs, and capabilities; and,
- Address RL and SRL properties in prioritizing mitigation funding.

This information does not need to be in a separate plan section, but the planning team must indicate where the information is located in the plan to meet the requirements.

through the delivery of technical assistance and training, or evaluating adoption and/or implementation of ordinances that reduce risk or increase resilience.

The HMA program also provides funding for Climate Resilient Mitigation Activities, which support communities in reducing risks associated with climate change. There are four eligible activities: Aquifer Storage and Recovery, Floodplain and Stream Restoration, Flood Diversion and Storage, and Green Infrastructure Methods. While focused on addressing the long-term impacts of flooding and drought, these activities can mitigate any natural hazard. For more information, visit the [Climate Resilient Mitigation Activities website](#).

The range of eligible mitigation projects is large and varies for each of the mitigation grants, as do the cost share requirements. For example, in some instances, the federal grant will cover the full cost of the project for FMA SRL property grants and HMGP management costs. Interested applicants should visit the [Hazard Mitigation Assistance Guidance](#) web site for up-to-date project eligibility and cost sharing information.

OTHER HAZARD MITIGATION FUNDING AND TECHNICAL ASSISTANCE RESOURCES

Many other agencies and organizations support hazard mitigation and community resilience through funding and technical assistance. Two other prominent federal funding programs include the Department of Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program and the Environmental Protection Agency's (EPA) Smart Growth program. The CDBG program aims to develop viable communities through an annual block grant to states, cities, and urban counties, but additional disaster recovery (DR) funds can also be appropriated following a Presidentially declared disaster for the purpose of recovery and mitigation. CDBG-DR prioritizes low- and moderate-income persons, but funding is fairly flexible and can be used to supplement other programs. For more information about the CDBG-DR program, visit the [HUD Exchange](#).

FEMA and the EPA have been collaborating on smart growth, mitigation, and recovery planning since 2010. Smart growth supports the implementation of land use and hazard management policies that help communities better prepare for and recover from disasters. EPA's [Smart Growth Implementation Assistance](#) program is not grant funding; instead, it provides technical assistance to three to five communities each year to support the development of smart growth policies and transferable tools for smart and disaster-resistant growth and is an example of non-monetary assistance that can advance a state's mitigation strategy.

In addition to HUD and the EPA, many federal agencies, state agencies, and other organizations provide funding and/or technical assistance for mitigation measures that meet compatible goals and objectives of creating safer, sustainable communities. At the federal level, the [Catalogue of Federal Domestic Assistance](#) provides detailed information about over 2,300 federal assistance programs. The Disaster Prevention and Relief category of programs would be most applicable to hazard mitigation.



Minot, ND, will receive over \$74 million in National Disaster Recovery Competition funding to support its integrated approach to addressing climate change and recent development that has increased the risk of frequent flooding. The City is launching a set of integrated projects that will reduce flood risk and improve water management, build affordable and resilient neighborhoods connected to transit and job centers, and foster economic resilience. Image: David Valdez/FEMA, Minot, ND

At the state level, entities that have programs to support hazard mitigation often include emergency management agencies; departments related to natural and environmental protection, conservation, and management; departments of transportation; departments for planning and economic development; departments of public works; and others. Partners may also come from the non-profit and private sectors. Many non-profit and private sector organizations act as community conveners and work to promote ideas, innovations, and projects that increase community resiliency. River basin commissions, environmental organizations, volunteer organizations active in disasters, utility companies, and others can work as partners on grant applications and fundraising for activities to make the state more resilient.

Additionally, an increasing number of philanthropic organizations and foundations are focusing energy and funding on resilience to address larger issues and promote well-being around the world. For example, the Rockefeller Foundation has partnered with HUD on the National Disaster Resilience Competition, providing targeted technical assistance to encourage and support a culture of resilience around disaster preparedness and planning. Professional organizations such as the American Planning Association, American Institute of Architects, U.S. Green Building Council, and others may also provide technical assistance to support the implementation of mitigation plans.

Examining these resources with an eye toward eligibility is an important part of the planning process. Mitigation actions may be implemented using federal grants and funding; state-budgeted funding to match federal grants or to support state grant programs; capital improvement plans at the state and local level; property owner personal finances; insurance; and other means. Planners, designers, engineers and other technical professionals, grant writers, managers and project champions working in and outside of government can provide technical assistance for mitigation. The key is that a combination of partners is often needed to implement mitigation measures.

SPECIAL CONSIDERATIONS FOR THE STATE MITIGATION STRATEGY

Link State Strategy with Local and Tribal Strategies

The state mitigation strategy must describe how local and tribal, as applicable, mitigation strategies are linked with the state mitigation strategy. This does not mean that all local and/or tribal mitigation strategies and actions need to be accounted for in the state strategy. Those strategies that align with the updated state goals should take precedence. Relevant actions should be catalogued and compiled during the development of state hazard mitigation plan updates. The purpose of this roll-up is to understand community vulnerabilities and priorities and ensure that their plans align with the state's strategy. The process of identifying and classifying these items can also help the planning team understand how the state strategy relates to the local and tribal, as applicable, plans. Ultimately, a state's mitigation program is a symbiotic relationship between the state and its communities.



Elizabeth Ashley, Mitigation Officer in the Nevada Department of Public Safety is conducting a meeting on mitigation. Most of the people in the room are government officials learning how they can obtain FEMA funds to help repair infrastructure and rebuild to withstand potential future disasters. Image: George Armstrong/FEMA, Fernley, NV

Integrate the Mitigation Strategy across Agencies and Departments

Plan integration at the state level means that the regulations, policies, codes, plans, and programs consider hazard mitigation and strive to leverage opportunities to reduce risk between and among planning efforts. This kind of plan integration can improve overall resilience to hazard events. Collaboration among stakeholders with the authority, interest, and expertise to implement mitigation measures enables them to leverage resources to reduce risk and maximize the benefit of each investment. The coordination and discussion between stakeholder agencies during and after the planning process also supports the implementation of the mitigation strategy over the long term. Ensuring that all of the state's mitigation and resilience strategies are moving in the same direction will ensure that the mitigation strategy is integrated across state planning efforts.

Celebrate Successes

Completed mitigation actions reflect the success of the mitigation strategy and publicizing mitigation successes helps to build awareness of hazard mitigation and its importance for risk reduction. The process of reviewing and updating the mitigation strategy provides a unique opportunity to take a comprehensive inventory of the successes of the previous strategy. Planning team members will be able to take these successes back to their respective agencies and organizations and incorporate the lessons learned into future mitigation efforts.

Understanding what made a specific action or strategy successful should include the vulnerability that was addressed and the funding source used to initiate implementation. Providing details while celebrating these successes encourages other agencies or departments to implement their own mitigation actions. In addition, the state may wish to review community success stories, as there may be lessons to learn. Celebrating success at a state level sends the message that mitigation is a valued and worthwhile investment.

RESOURCES

The following resources may be used by states to inform the update of the mitigation strategy. Visit FEMA's [Hazard Mitigation Planning website](#) for additional and up-to-date resources.

FEMA – MITIGATION IDEAS: A RESOURCE FOR REDUCING RISK TO NATURAL HAZARDS

[Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards](#) is a resource that states can use to identify potential mitigation actions for the following natural hazards: drought, earthquake, erosion, extreme temperatures, flood, hail, landslide, lightning, sea level rise, severe wind, severe winter weather, storm surge, subsidence, tornado, tsunami, and wildfire. While this document provides examples of mitigation actions, it is important to note that it is an idea book; actions in the state mitigation strategy must be specific, cost-effective, and technically feasible.

FEMA – HAZARD MITIGATION ASSISTANCE GUIDANCE

[Hazard Mitigation Assistance Guidance and Addendum](#), February 2015, details the specific criteria of the three HMA programs: HMGP, PDM, and FMA. The guidance consolidates each program's eligibility information and outlines the common elements and unique requirements among the grant programs. This guidance document is released annually, so be sure to visit the [Hazard Mitigation Assistance website](#) for more up-to-date information.

FEMA – LOCAL MITIGATION PLANNING HANDBOOK

The [Local Mitigation Planning Handbook](#), March 2013, is a resource for the development of local hazard mitigation plans, ideas, and resources. While primarily for a local audience, the concepts, processes, and examples in the Handbook may be adapted to the state level. Understanding the reference point used for local planning efforts can also assist the state team in linking local mitigation plan information to the state hazard mitigation plan.

STATE HAZARD MITIGATION PLANS

Other state hazard mitigation plans may include resources, strategies, and other information that may be useful for your state's hazard mitigation plan. In particular, reviewing other state mitigation strategies may give your state's planning group ideas on funding and technical assistance resources for mitigation actions and ways to prioritize them. Many state hazard mitigation plans are available via the state Emergency Management Agency (EMA) or Department of Homeland Security (DHS). Visit FEMA's [directory of State Hazard Mitigation Officers](#) to obtain the websites of each state's EMA.

STATE SILVER JACKETS PROGRAM

The [State Silver Jackets Program](#), a U.S. Army Corps of Engineers (USACE) interagency flood risk management initiative, enlists teams in states across the country to apply shared knowledge to response, recovery, and mitigation initiatives that will reduce flood losses. Visit the [State Silver Jackets Program](#) and select your state team to view available resources. For example, the Pennsylvania Silver Jackets Team created the [Interagency Flood Mitigation Program Guide](#) to outline funding and technical assistance partners. While many resources are state-specific, there may be transferable initiatives.